

SEQUENCE LISTING

<110> Padigaru, Muralidhara
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Smithson, Glennda



<120> Novel Proteins and Nucleic Acids Encoding Same

<130> 15966-789 US

<140> 09/844,861
<141> 2001-04-27

<150> 60/199,947
<151> 2000-04-27

<150> 60/199,960
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<151> 2001-01-04

<150> 60/275,604
<151> 2001-03-13

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<170> PatentIn Ver. 2.1

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Phe Phe Ala Val Tyr Leu Thr Ala Leu Leu Gly Asn Ile Ile Ile Leu
35 40 45

Phe Val Ile Gln Thr Glu Gln Ser Leu His Gln Pro Met Phe Tyr Phe
50 55 60

Leu Ala Met Leu Ala Gly Thr Asp Leu Gly Leu Ser Thr Ala Thr Ile
65 70 75 80

Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Leu Gly Glu Ile Ala Phe
85 90 95

Gly Ala Cys Ile Thr Gln Met Tyr Thr Ile His Ile Cys Thr Gly Leu
100 105 110

Glu Ser Val Val Leu Thr Val Thr Gly Ile Asp Arg Tyr Ile Ala Ile
115 120 125

Cys Asn Pro Leu Arg Tyr Ser Met Ile Leu Thr Asn Lys Val Ile Ala
130 135 140

Ile Leu Gly Ile Val Ile Ile Val Arg Thr Leu Val Phe Val Thr Pro
 145 150 155 160
 Phe Thr Phe Leu Thr Leu Arg Leu Pro Phe Cys Gly Val Arg Ile Ile
 165 170 175
 Pro His Thr Tyr Cys Glu His Met Gly Leu Ala Lys Leu Ala Cys Ala
 180 185 190
 Ser Ile Asn Val Ile Tyr Gly Leu Ile Ala Phe Ser Val Gly Tyr Ile
 195 200 205
 Asp Ile Ser Val Ile Gly Phe Ser Tyr Val Gln Ile Leu Arg Ala Val
 210 215 220
 Phe His Leu Pro Ala Trp Asp Ala Arg Leu Lys Ala Leu Ser Thr Cys
 225 230 235 240
 Gly Ser His Val Cys Val Met Leu Ala Phe Tyr Leu Pro Ala Leu Phe
 245 250 255
 Ser Phe Met Thr His Arg Phe Gly His Asn Ile Pro His Tyr Ile His
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 Ile Leu Leu Ala Asn Leu Tyr Val Val Phe Pro Pro Ala Leu Asn Ser
 275 280 285
 Val Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Gln Val Leu Arg
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Gly Val Pro Gly Leu Glu Ala Thr His Ile Trp Ile Ser Leu Pro Phe
35 40 45

Cys Phe Met Tyr Ile Ile Ala Val Val Gly Asn Cys Gly Leu Ile Cys
50 55 60

Leu Ile Ser His Glu Glu Ala Leu His Arg Pro Met Tyr Tyr Phe Leu
65 70 75 80

Ala Leu Leu Ser Phe Thr Asp Val Thr Leu Cys Thr Thr Met Val Pro
85 90 95

Asn Met Leu Cys Ile Phe Trp Phe Asn Leu Lys Glu Ile Asp Phe Asn
100 105 110

Ala Cys Leu Ala Gln Met Phe Phe Val His Met Leu Thr Gly Met Glu
115 120 125

Ser Gly Val Leu Met Leu Met Ala Leu Asp Arg Tyr Val Ala Ile Cys
130 135 140

Tyr Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asn Pro Val Ile Ala Lys
145 150 155 160

Ala Gly Leu Ala Thr Phe Leu Arg Asn Val Met Leu Ile Ile Pro Phe
165 170 175

Thr Leu Leu Thr Lys Arg Leu Pro Tyr Cys Arg Gly Asn Phe Ile Pro
180 185 190

His Thr Tyr Cys Asp His Met Ser Val Ala Lys Val Ser Cys Gly Asn
195 200 205

Phe Lys Val Asn Ala Ile Tyr Gly Leu Met Val Ala Leu Leu Ile Gly
210 215 220

Val Phe Asp Ile Cys Cys Ile Ser Val Ser Tyr Thr Met Ile Leu Gln
225 230 235 240

Ala	Val	Met	Ser	Leu	Ser	Ser	Ala	Asp	Ala	Arg	His	Lys	Ala	Phe	Ser
245															255
Thr	Cys	Thr	Ser	His	Met	Cys	Ser	Ile	Val	Ile	Thr	Tyr	Val	Ala	Ala
260															270
Phe	Phe	Thr	Phe	Phe	Thr	His	Arg	Phe	Val	Gly	His	Asn	Ile	Pro	Asn
275															285
His	Ile	His	Ile	Ile	Val	Ala	Asn	Leu	Tyr	Leu	Leu	Leu	Pro	Pro	Thr
290															300
Met	Asn	Pro	Ile	Val	Tyr	Gly	Val	Lys	Thr	Lys	Gln	Ile	Gln	Glu	Gly
305															320
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 acagggaaact tcggccttat gtacctcata tactgtgtg aggccttaca cagacctatg 240
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 Leu Cys Thr Met Tyr Ser Ile Ala Ile Thr Gly Asn Phe Gly Leu Met
 35 40 45

 Tyr Leu Ile Tyr Cys Asp Glu Ala Leu His Arg Pro Met Tyr Val Phe
 50 55 60

 Leu Ala Leu Leu Ser Phe Thr Asp Val Leu Met Cys Thr Ser Thr Leu
 65 70 75 80

 Pro Asn Thr Leu Phe Ile Leu Trp Phe Asn Leu Lys Glu Ile Asp Phe
 85 90 95

 Lys Ala Cys Leu Ala Gln Met Phe Phe Val His Thr Phe Thr Gly Met
 100 105 110

 Glu Ser Gly Val Leu Met Leu Met Ala Leu Asp His Cys Val Ala Ile
 115 120 125

 Cys Phe Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asn Ser Val Ile Ala
 130 135 140

 Lys Ala Gly Phe Leu Thr Phe Leu Arg Gly Val Met Leu Val Ile Pro
 145 150 155 160

 Ser Thr Phe Leu Thr Lys Arg Leu Pro Tyr Cys Lys Gly Asn Val Ile
 165 170 175

 Pro His Thr Tyr Cys Asp His Met Ser Val Ala Lys Ile Ser Cys Gly
 180 185 190

 Asn Val Arg Val Asn Ala Ile Tyr Gly Leu Ile Val Ala Leu Leu Ile
 195 200 205

 Gly Gly Phe Asp Ile Leu Cys Ile Thr Ile Ser Tyr Thr Met Ile Leu
 210 215 220

 Gln Ala Val Val Ser Leu Ser Ser Ala Asp Ala Arg Gln Lys Ala Phe
 225 230 235 240

 Ser Thr Cys Thr Ala His Phe Cys Ala Ile Val Leu Thr Tyr Val Pro
 245 250 255

 Ala Phe Phe Thr Phe Phe Thr His His Phe Gly Gly His Thr Ile Pro
 260 265 270

 Leu His Ile His Ile Ile Met Ala Asn Leu Tyr Leu Leu Met Pro Pro
 275 280 285

 Thr Met Asn Pro Ile Val Tyr Gly Val Lys Thr Arg Gln Val Arg Glu
 290 295 300

 Ser Val Ile Arg Phe Phe Leu Lys Gly Lys Asp Asn Ser His Asn Phe
 305 310 315 320

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<212> DNA
<213> Homo sapiens

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<212> PRT
<213> Homo sapiens

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Phe Phe Ala Val Tyr Leu Thr Ala Leu Leu Gly Asn Ile Ile Ile Leu
35 40 45
Phe Val Ile Gln Thr Glu Gln Ser Leu His Gln Pro Met Phe Tyr Phe
50 55 60
Leu Ala Met Leu Ala Gly Thr Asp Leu Gly Leu Ser Thr Ala Thr Ile
65 70 75 80
Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Leu Gly Glu Ile Ala Phe
85 90 95
Gly Ala Cys Ile Thr Gln Met Tyr Thr Ile His Ile Cys Thr Gly Leu

100	105	110
Glu Ser Val Val Leu Thr Val Thr Gly Ile Asp Arg Tyr Ile Ala Ile		
115	120	125
Cys Asn Pro Leu Arg Tyr Ser Met Ile Leu Thr Asn Lys Val Ile Ala		
130	135	140
Ile Leu Gly Ile Val Ile Ile Val Arg Thr Leu Val Phe Val Thr Pro		
145	150	155
Phe Thr Phe Leu Thr Leu Arg Leu Pro Phe Cys Gly Val Arg Ile Ile		
165	170	175
Pro His Thr Tyr Cys Glu His Met Gly Leu Ala Lys Leu Ala Cys Ala		
180	185	190
Ser Ile Asn Val Ile Tyr Gly Leu Ile Ala Phe Ser Val Gly Tyr Ile		
195	200	205
Asp Ile Ser Val Ile Gly Phe Ser Tyr Val Gln Ile Leu Arg Ala Val		
210	215	220
Phe His Leu Pro Ala Trp Asp Ala Arg Leu Lys Ala Leu Ser Thr Cys		
225	230	235
Gly Ser His Val Cys Val Met Leu Ala Phe Tyr Leu Pro Ala Leu Phe		
245	250	255
Ser Phe Met Thr His Arg Phe Gly His Asn Ile Pro His Tyr Ile His		
260	265	270
Ile Leu Leu Ala Asn Leu Tyr Val Val Phe Pro Pro Ala Leu Asn Ser		
275	280	285
Val Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Gln Val Leu Arg		
290	295	300
Ile Leu Asn Pro Lys Ser Phe Trp His Phe Asp Pro Lys Arg Ile Phe		
305	310	315
His Asn Asn Ser Val Arg Gln		
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 <212> DNA
 <213> Homo sapiens

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 tgtatgtgg tgcacccctt gcccctaacc ctgtcatttac tggagtgcagg accaagcaga 960
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 taaatatac tatatacaac ccaaattatc 1050

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Phe Cys Ile Val Tyr Leu Ile Ala Ile Val Gly Asn Met Thr Ile Leu
 35 40 45

Phe Val Ile Lys Thr Glu His Ser Leu His Gln Pro Met Phe Tyr Phe
 50 55 60

Leu Ala Met Leu Ser Met Ile Asp Leu Gly Leu Ser Thr Ser Thr Ile
 65 70 75 80

Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Leu Gln Glu Ile Ser Phe
 85 90 95

Gly Gly Cys Leu Leu Gln Met Phe Phe Ile His Met Phe Thr Gly Met
 100 105 110

Glu Thr Val Leu Leu Val Val Met Ala Tyr Asp Arg Phe Val Ala Ile
 115 120 125

Cys Asn Pro Leu Gln Tyr Thr Met Ile Leu Thr Asn Lys Thr Ile Ser
 130 135 140

Ile Leu Ala Ser Val Val Gly Arg Asn Leu Val Leu Val Thr Pro
 145 150 155 160

Phe Val Phe Leu Ile Leu Arg Leu Pro Phe Cys Gly His Asn Ile Val
 165 170 175

Pro His Thr Tyr Cys Glu His Arg Gly Leu Ala Gly Leu Ala Cys Ala
 180 185 190

Pro Ile Lys Ile Asn Ile Ile Tyr Gly Leu Met Val Ile Ser Tyr Ile

195

200

205

Ile Val Asp Val Ile Leu Ile Ala Ser Ser Tyr Val Leu Ile Leu Arg
210 215 220

Ala Val Phe Arg Leu Pro Ser Gln Asp Val Arg Leu Lys Ala Phe Asn
225 230 235 240

Thr Cys Gly Ser His Val Cys Val Met Leu Cys Phe Tyr Thr Pro Ala
245 250 255

Phe Phe Ser Phe Met Thr His Arg Phe Gly Gln Asn Ile Pro His Tyr
260 265 270

Ile His Ile Leu Leu Ala Asn Leu Tyr Val Val Val Pro Pro Ala Leu
275 280 285

Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Gln Ile Arg Glu Gln Ile
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Val Lys Ile Phe Val Gln Lys Glu
305 310

<210> 11

<211> 1050

<212> DNA

<213> Homo sapiens

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ggttggagag tctgtcactc taacctaata 1050

<210> 12

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<212> PRT

<213> Homo sapiens

<400> 12

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10

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Leu Ile Tyr Gly Val Thr Leu Leu Ala Asn Leu Gly Met Ile Ala Leu
35 40 45

Ile Gln Val Ser Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Ser
50 55 60

His Leu Ser Ser Val Asp Phe Cys Tyr Ser Ser Ile Ile Val Pro Lys
65 70 75 80

Met Leu Ala Asn Ile Phe Asn Lys Asp Lys Ala Ile Ser Phe Leu Gly
85 90 95

Cys Met Val Gln Phe Tyr Leu Phe Cys Thr Cys Val Val Thr Glu Val
100 105 110

Phe Leu Leu Ala Val Met Ala Tyr Asp Arg Phe Val Ala Ile Cys Asn
115 120 125.

Pro Leu Leu Tyr Thr Val Thr Met Ser Trp Lys Val Arg Val Glu Leu
130 135 140

Ala Ser Cys Cys Tyr Phe Cys Gly Thr Val Cys Ser Leu Ile His Leu
145 150 155 160

Cys Leu Ala Leu Arg Ile Pro Phe Tyr Arg Ser Asn Val Ile Asn His
165 170 175

Phe Phe Cys Asp Leu Pro Pro Val Leu Ser Leu Ala Cys Ser Asp Ile
180 185 190

Thr Val Asn Glu Thr Leu Leu Phe Leu Val Ala Thr Leu Asn Glu Ser
195 200 205

Val Thr Ile Met Ile Ile Leu Thr Ser Tyr Leu Leu Ile Leu Thr Thr
210 215 220

Ile Leu Lys Met Gly Ser Ala Glu Gly Arg His Lys Ala Phe Ser Thr
225 230 235 240

Cys Ala Ser His Leu Thr Ala Ile Thr Val Phe His Gly Thr Val Leu
245 250 255

Ser Ile Tyr Cys Arg Pro Ser Ser Gly Asn Ser Gly Asp Ala Asp Lys
260 265 270

Val Ala Thr Val Phe Tyr Thr Val Val Ile Pro Met Leu Asn Ser Val
275 280 285

Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Glu Ala Leu Arg Lys Val
290 295 300

Met Gly Ser Lys Ile His Ser

305

310

<210> 13
<211> 1050
<212> DNA
<213> Homo sapiens

<400> 13
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cccaactctgc acaatgtaca tcataccttct tggggaaat cttggctctt tgcacccat 180
ttattatggag gagtccttac atcatccgat gtatttttt ttggccatg ctctccct 240
cattgacccctt cttacctgca ccaccactct acccaatgca ctctgcacatc tctggttcag 300
tctcaaagaa attaacttca atgcttgctt ggcccaatgtt ttccttgcac 360
agggtgtggag tctgggtgc tcatgctcat ggctctagac cgctatgttag ccatttgcta 420
ccctttgcgt tatgctacca cactcacaa ccctatcatt gccaaggctg agcttgccac 480
cttcctgagg ggtgtattgc tgatgattcc tttccattc ttggtaagc gtttgcctt 540
ctgccaaggc aatattatct cccatacgta ctgcgaccac atgtctgttag taaagctatc 600
ttgtgccagc atcaaggctca atgtaatcta tggctcaatg gttgctctcc tgattggagt 660
gtttgacatt tggtgatataat cttgtctta cacttgatc ctcaaggcag cgatcagcct 720
ctcttcatca gatgctcggc agaaggctt cagcacctgc actgcccata tatctgccat 780
catcatcacc tatgttccag cattttcac tttcttgcc caccgtttt ggggacacac 840
aattccccct tctttcaca tcattgtggc taatcttctt ctcttccttc ccccaactct 900
aaaccctatt gtttatggag taaagacaaa acagatacgc aagagtgtca taaagttctt 960
ccaggggtgat aagggtgcag gttgattcaa ggcaacttaa ttcagatgga agaaagataa 1020
atgaaaaata acaaagaata aacttacgtg 1050

<210> 14
<211> 324
<212> PRT
<213> Homo sapiens

<400> 14
Met Pro Leu Phe Asn Ser Leu Cys Trp Phe Pro Thr Ile His Val Thr
1 5 10 15

Pro Pro Ser Phe Ile Leu Asn Gly Ile Pro Gly Leu Glu Arg Val His
20 25 30

Val Trp Ile Ser Leu Pro Leu Cys Thr Met Tyr Ile Ile Phe Leu Val
35 40 45

Gly Asn Leu Gly Leu Val Tyr Leu Ile Tyr Tyr Glu Glu Ser Leu His
50 55 60

His Pro Met Tyr Phe Phe Gly His Ala Leu Ser Leu Ile Asp Leu
65 70 75 80

Leu Thr Cys Thr Thr Leu Pro Asn Ala Leu Cys Ile Phe Trp Phe
85 90 95

Ser Leu Lys Glu Ile Asn Phe Asn Ala Cys Leu Ala Gln Met Phe Phe
100 105 110

Val His Gly Phe Thr Gly Val Glu Ser Gly Val Leu Met Leu Met Ala

115	120	125
Leu Asp Arg Tyr Val Ala Ile Cys Tyr Pro Leu Arg Tyr Ala Thr Thr		
130	135	140
Leu Thr Asn Pro Ile Ile Ala Lys Ala Glu Leu Ala Thr Phe Leu Arg		
145	150	155
Gly Val Leu Leu Met Ile Pro Phe Pro Phe Leu Val Lys Arg Leu Pro		
165	170	175
Phe Cys Gln Ser Asn Ile Ile Ser His Thr Tyr Cys Asp His Met Ser		
180	185	190
Val Val Lys Leu Ser Cys Ala Ser Ile Lys Val Asn Val Ile Tyr Gly		
195	200	205
Leu Met Val Ala Leu Leu Ile Gly Val Phe Asp Ile Cys Cys Ile Ser		
210	215	220
Leu Ser Tyr Thr Leu Ile Leu Lys Ala Ala Ile Ser Leu Ser Ser Ser		
225	230	235
Asp Ala Arg Gln Lys Ala Phe Ser Thr Cys Thr Ala His Ile Ser Ala		
245	250	255
Ile Ile Ile Thr Tyr Val Pro Ala Phe Phe Thr Phe Phe Ala His Arg		
260	265	270
Phe Gly Gly His Thr Ile Pro Pro Ser Leu His Ile Ile Val Ala Asn		
275	280	285
Leu Tyr Leu Leu Pro Pro Thr Leu Asn Pro Ile Val Tyr Gly Val		
290	295	300
Lys Thr Lys Gln Ile Arg Lys Ser Val Ile Lys Phe Phe Gln Gly Asp		
305	310	315
Lys Gly Ala Gly		

<210> 15
 <211> 1050
 <212> DNA
 <213> Homo sapiens

<400> 15
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 gatgtgcaca tctggatgg attccctttt ttctctgtgt atcttattgc actcctggaa 180
 aatgctgcta tcttcttgt gatccaaact gagcagagtc tccatgagcc catgtactac 240
 tgcctggcca tggatggattc cattgacctg agcttgcata cggccaccat tcccaaaatg 300
 ctgggcattct tctggttcaa tatcaaggaa atatctttt gaggctacat ttctcagatg 360
 ttcttcattcc atttcttcac tgtcatggag agcatcgat tggtgccat ggccttgac 420
 cgctacattg ccatttgc aaacctttgg tacaccatga tcctcaccag caaaatcatc 480
 agcctcattg caggcattgc tgtcctgagg agcttgata tggcattcc actgggttt 540

ctcctcttaa gggtgccctt ctgtggacat cgtatcatcc ctcataactta ctgtgagcac 600
 atggcattg cccgtctggc ctgtgccagc atcaaagtca acattatgtt tggtcttggc 660
 agtatttctc tcttgttatt ggatgtgctc cttattattc tctcccatat caggatcctc 720
 tatgtgtct tctgcctgcc ctccctggaa gctcgactca aagctctcaa cacctgtggc 780
 tctcacattg gtgttatctt agcctttct acaccagcat ttttctctt ctttacacac 840
 tgcttggcc atgatattcc ccaatatac cacatttct tgctaatct atatgtggtt 900
 gttcctccca ccctcaatcc tgtaatctat ggggtcagaa ccaaacatat tagggagaca 960
 gtgctgagga ttttctcaa gacagatcac taaccagttg gagtttggag ggtctcttt 1020
 agcattcatg atgaagcagc cactagggag 1050

<210> 16
 <211> 317
 <212> PRT
 <213> Homo sapiens

<400> 16
 Met Glu Lys Ser Asn Val Ser Ser Val Tyr Gly Phe Ile Leu Val Gly
 1 5 10 15

 Phe Ser Asp Arg Pro Lys Leu Glu Met Val Leu Phe Thr Val Asn Phe
 20 25 30

 Ile Leu Tyr Ser Val Ala Val Leu Gly Asn Ser Thr Ile Ile Leu Val
 35 40 45

 Cys Ile Leu Asp Ser Gln Leu His Thr Pro Met Tyr Phe Phe Leu Ala
 50 55 60

 Asn Leu Ser Phe Leu Asp Leu Cys Phe Ser Thr Ser Cys Ile Pro Gln
 65 70 75 80

 Met Leu Val Asn Leu Trp Gly Pro Asp Lys Thr Ile Ser Cys Ala Gly
 85 90 95

 Cys Val Val Gln Leu Phe Ser Phe Leu Ser Val Arg Gly Ile Glu Cys
 100 105 110

 Ile Leu Leu Ala Val Met Ala Tyr Asp Ser Tyr Ala Ala Val Cys Lys
 115 120 125

 Pro Leu Arg Tyr Leu Val Ile Met His Leu Gln Leu Cys Leu Gly Leu
 130 135 140

 Met Ala Ala Ala Trp Gly Ser Gly Leu Val Asn Ala Val Val Met Ser
 145 150 155 160

 Pro Leu Thr Met Thr Leu Ser Arg Ser Gly Arg Arg Arg Val Asn His
 165 170 175

 Phe Leu Cys Glu Lys Pro Ala Leu Ile Lys Met Ala Cys Leu Asp Val
 180 185 190

 Arg Ala Val Glu Met Leu Ala Phe Ala Phe Ala Val Leu Ile Val Leu
 195 200 205

 Leu Pro Leu Thr Leu Ile Leu Val Ser Tyr Gly Tyr Ile Ala Ala Ala

210

215

220

Val Leu Ser Ile Lys Ser Ala Ala Arg Gln Trp Lys Ala Phe His Thr
225 230 235 240

Cys Ser Ser His Leu Thr Val Val Ser Leu Phe Tyr Gly Ser Ile Ile
245 250 255

Tyr Met Tyr Met Gln Pro Gly Asn Ser Ser Ser Gln Asp Gln Gly Lys
260 265 270

Phe Leu Thr Leu Phe Tyr Asn Leu Val Thr Pro Met Leu Asn Leu Leu
275 280 285

Ile Tyr Thr Leu Arg Asn Lys Glu Val Lys Gly Ala Leu Lys Lys Val
290 295 300

Leu Gly Arg Gln Asn Glu Leu Glu Lys Tyr Asp Lys Leu
305 310 315

<210> 17

<211> 1050

<212> DNA

<213> Homo sapiens

<400> 17

cacagctagt ttgttaatcat aattttccag atcactgaaa gaaaggcagta aaatatatgg 60
gaaaatatga caacacacccg aaatgacacc ctctccactg aagcttcaga cttcctcttg 120
aattgttttg tcagatcccc cagctggcag cactggctgt cccctggccct cagcctcctt 180
ttcctcttgg ccgttaggggc caacaccacc ctcctgtatga ccatctggct ggaggcctct 240
ctgaccaccgc ccctgtacta cctgtctcagc ctcctctccc tgctggacat cgtgtctgc 300
ctcaactgtca tccccaaaggc cctgaccatc ttctgggttt acctcaggcc catcaagcttc 360
cctgcctgtct tcctccagat gtacatcatg aattgtttcc tagccatggaa gtcttgacaca 420
ttcatggtca tggcctatga tcgttatgta gccatctgcc acccaactgag atatccatca 480
atcatcaactg atcaacttgt agtcaaggct gccatgttta ttttgaccag aaatgtgctt 540
atgactctgc ccatccccat ccttcagca caactccgtt attgtggaaag aaatgtcatt 600
gagaactgca tctgtgccaa tatgtctgtt tccagactct cctgcgtatga tgtcaccatc 660
aatcacctt accaatttgc tggaggctgg actctgttag gatctgacccatc catccttatac 720
ttcctctctt acacccatc tctgtcgagct gtgtcgagac tcaaggcaga ggggtccgtg 780
gcaaaggccc taagcacatg tggctccac ttcatgtca tcctcttctt cagcaccatc 840
cttctgggttt ttgtcctcac acatgtggct aagaagaaag tctcccctga tgtgccagtc 900
ttgctcaatg ttctccacca tgcatttcct gcagccctta accccatcat ttacgggtg 960
agaacccaag aaattaagca gggaatgcag aggttgtga agaaagggtg ctaacaagga 1020
ccactggatc tctgaatatc taaaataaga 1050

<210> 18

<211> 315

<212> PRT

<213> Homo sapiens

<400> 18

Met Thr Thr His Arg Asn Asp Thr Leu Ser Thr Glu Ala Ser Asp Phe
1 5 10 15

Leu Leu Asn Cys Phe Val Arg Ser Pro Ser Trp Gln His Trp Leu Ser

20

25

30

Leu Pro Leu Ser Leu Leu Phe Leu Leu Ala Val Gly Ala Asn Thr Thr
 35 40 45

Leu Leu Met Thr Ile Trp Leu Glu Ala Ser Leu His Gln Pro Leu Tyr
 50 55 60

Tyr Leu Leu Ser Leu Leu Ser Leu Leu Asp Ile Val Leu Cys Leu Thr
 65 70 75 80

Val Ile Pro Lys Val Leu Thr Ile Phe Trp Phe Asp Leu Arg Pro Ile
 85 90 95

Ser Phe Pro Ala Cys Phe Leu Gln Met Tyr Ile Met Asn Cys Phe Leu
 100 105 110

Ala Met Glu Ser Cys Thr Phe Met Val Met Ala Tyr Asp Arg Tyr Val
 115 120 125

Ala Ile Cys His Pro Leu Arg Tyr Pro Ser Ile Ile Thr Asp His Phe
 130 135 140

Val Val Lys Ala Ala Met Phe Ile Leu Thr Arg Asn Val Leu Met Thr
 145 150 155 160

Leu Pro Ile Pro Ile Leu Ser Ala Gln Leu Arg Tyr Cys Gly Arg Asn
 165 170 175

Val Ile Glu Asn Cys Ile Cys Ala Asn Met Ser Val Ser Arg Leu Ser
 180 185 190

Cys Asp Asp Val Thr Ile Asn His Leu Tyr Gln Phe Ala Gly Gly Trp
 195 200 205

Thr Leu Leu Gly Ser Asp Leu Ile Leu Ile Phe Leu Ser Tyr Thr Phe
 210 215 220

Ile Leu Arg Ala Val Leu Arg Leu Lys Ala Glu Gly Ala Val Ala Lys
 225 230 235 240

Ala Leu Ser Thr Cys Gly Ser His Phe Met Leu Ile Leu Phe Phe Ser
 245 250 255

Thr Ile Leu Leu Val Phe Val Leu Thr His Val Ala Lys Lys Lys Val
 260 265 270

Ser Pro Asp Val Pro Val Leu Leu Asn Val Leu His His Val Ile Pro
 275 280 285

Ala Ala Leu Asn Pro Ile Ile Tyr Gly Val Arg Thr Gln Glu Ile Lys
 290 295 300

Gln Gly Met Gln Arg Leu Leu Lys Lys Gly Cys
 305 310 315

<210> 19
<211> 1151
<212> DNA
<213> Homo sapiens

<400> 19
taatcttgc aggtggata gcacaggtt aactctaatac atatatactg tagaaggat 60
atatagaagg tgaagaagcc ctgtaaaaaa tgacaaggag atttccagga gccatgcttc 120
cctctaatat cacctcaaca catccagctg tctttttgtt gtaggaatt cctggttgg 180
aacacacgtca tgcctggatc tccatcccct tctgcttgc ttatactctg gccctgctag 240
gcaactgtac ccttctttc attatccagg ctgatgcagc cctccatgaa cccatgtacc 300
tctttctggc catgttggca accattgact tggttcttc ttctacaacg ctgccccaaa 360
tgcttgcattt attctggatc agggatcagg agatcaactt cttgcctgt ctggccaga 420
tgttttctt tcactccctc tccatcatgg agtcagcagt gctgctggcc atggcctttg 480
accgctatgt ggccatctgc aagccattgc actacacgc ggtcctgact gggccctca 540
tcaccaagat tggcatggct gctgtggccc gggctgtgac actaatgact ccactcccc 600
tcctgctcag acgcttccac tactgccag gcccagtgtat tgcccatgt tactgtgaac 660
acatggctgt ggtaaggctg gcgtgtgggg acactagctt caacaatatac tatggcattt 720
ctgtggccat gtttagtgtt gtgttggacc tgctctttgt tattctgtct tatgtcttca 780
tccttcaggc agttctccag cttgcctctc aggaggcccg ctacaaagca tttggacat 840
gtgtgtctca cataggtgcc atccgttcca cctacactcc agtagtcatc tcttcagtca 900
tgcaccgtgt agcccgccat gctgcccctc gtgtccacat actccttgct attttctatc 960
tcctttccccc acccatggtc aatcctatca tataatgggtt caagaccaag cagattcgtg 1020
agtagtgc t cagtttattt cagagaaaga acatgttagat ggatagttct ctttttttat 1080
cccacttgcc aagtaatgag aatgctggat tggggttgag gggaaaaatc taaataggaa 1140
aattgcagag t 1151

<210> 20
<211> 322
<212> PRT
<213> Homo sapiens

<400> 20
Met Thr Arg Arg Phe Pro Gly Ala Met Leu Pro Ser Asn Ile Thr Ser
1 5 10 15
Thr His Pro Ala Val Phe Leu Leu Val Gly Ile Pro Gly Leu Glu His
20 25 30
Leu His Ala Trp Ile Ser Ile Pro Phe Cys Phe Ala Tyr Thr Leu Ala
35 40 45
Leu Leu Gly Asn Cys Thr Leu Leu Phe Ile Ile Gln Ala Asp Ala Ala
50 55 60
Leu His Glu Pro Met Tyr Leu Phe Leu Ala Met Leu Ala Thr Ile Asp
65 70 75 80
Leu Val Leu Ser Ser Thr Thr Leu Pro Lys Met Leu Ala Ile Phe Trp
85 90 95
Phe Arg Asp Gln Glu Ile Asn Phe Phe Ala Cys Leu Val Gln Met Phe
100 105 110
Phe Leu His Ser Phe Ser Ile Met Glu Ser Ala Val Leu Leu Ala Met
115 120 125

Ala Phe Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu His Tyr Thr Thr
 130 135 140
 Val Leu Thr Gly Ser Leu Ile Thr Lys Ile Gly Met Ala Ala Val Ala
 145 150 155 160
 Arg Ala Val Thr Leu Met Thr Pro Leu Pro Phe Leu Leu Arg Arg Phe
 165 170 175
 His Tyr Cys Arg Gly Pro Val Ile Ala His Cys Tyr Cys Glu His Met
 180 185 190
 Ala Val Val Arg Leu Ala Cys Gly Asp Thr Ser Phe Asn Asn Ile Tyr
 195 200 205
 Gly Ile Ala Val Ala Met Phe Ser Val Val Leu Asp Leu Leu Phe Val
 210 215 220
 Ile Leu Ser Tyr Val Phe Ile Leu Gln Ala Val Leu Gln Leu Ala Ser
 225 230 235 240
 Gln Glu Ala Arg Tyr Lys Ala Phe Gly Thr Cys Val Ser His Ile Gly
 245 250 255
 Ala Ile Leu Ser Thr Tyr Thr Pro Val Val Ile Ser Ser Val Met His
 260 265 270
 Arg Val Ala Arg His Ala Ala Pro Arg Val His Ile Leu Leu Ala Ile
 275 280 285
 Phe Tyr Leu Leu Phe Pro Pro Met Val Asn Pro Ile Ile Tyr Gly Val
 290 295 300
 Lys Thr Lys Gln Ile Arg Glu Tyr Val Leu Ser Leu Phe Gln Arg Lys
 305 310 315 320
 Asn Met

<210> 21
 <211> 982
 <212> DNA
 <213> Homo sapiens

<400> 21
 ccttaaaatg acaaggagat ttccaggagc catgctcccc tctaataatca cctcaacaca 60
 tccagctgtc tttttgttgg taggaattcc tggtttggaa cacctgcatt cctggatctc 120
 catccccttc tgctttgttt atactctggc cctgtcttaggc aactgtaccc ttctcttcat 180
 tatccgggtt gatgcagccc tccatgaacc catgtaccc ttcttgccca tggggcaac 240
 cattgacttg gttctttctt ctacaacgtt gcccaaaatg ctggccatat tctgggttcag 300
 ggatcaggag atcaacttct ttgcctgtct ggtccagatg ttcttccttc actccttc 360
 catcatggag tcagcagttc tgctggccat ggccttgac cgctatgtgg ccatctgcaa 420
 gccattgcac tacacgacgg tcctgactgg gtccctcatc accaagattg gcatggctgc 480
 tgtggccccc gctgtgacac taatgactcc actcccttc ctgctcagac gcttccacta 540
 ctgcccggc ccagtgttgc cccattgtca ctgtgaacac atggctgtgg taaggctggc 600

gtgtggggac actagcttca acaatatcta tggcattgct gtggccatgt ttattgttgt 660
gttggacctg ctctttgtta tcctgtctta tgtcttcata ctcaggcag ttctccagct 720
tgcctctcag gaggcccgt acaaggcatt tggacatgt gtgtctcaca taggtgccat 780
cctgtccacc tacactccag tagtcatctc ttcagtcatg caccgtgtag cccgcctatgc 840
tgcccctcggt gtccacatac tccttgctat tttctatctc cttttccac ccgtggtaaa 900
tcctatcata tatggagtcc agaccaagca gattcgtgtag tatgtgctca gtctattcca 960
gagaaaagaac atgttagatgg aa 982

<210> 22

<211> 322

<212> PRT

<213> Homo sapiens

<400> 22

Met Thr Arg Arg Phe Pro Gly Ala Met Leu Pro Ser Asn Ile Thr Ser
1 5 10 15

Thr His Pro Ala Val Phe Leu Leu Val Gly Ile Pro Gly Leu Glu His
20 25 30

Leu His Ala Trp Ile Ser Ile Pro Phe Cys Phe Ala Tyr Thr Leu Ala
35 40 45

Leu Leu Gly Asn Cys Thr Leu Leu Phe Ile Ile Arg Ala Asp Ala Ala
50 55 60

Leu His Glu Pro Met Tyr Leu Phe Leu Ala Met Leu Ala Thr Ile Asp
65 70 75 80

Leu Val Leu Ser Ser Thr Thr Leu Pro Lys Met Leu Ala Ile Phe Trp
85 90 95

Phe Arg Asp Gln Glu Ile Asn Phe Phe Ala Cys Leu Val Gln Met Phe
100 105 110

Phe Leu His Ser Phe Ser Ile Met Glu Ser Ala Val Leu Leu Ala Met
115 120 125

Ala Phe Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu His Tyr Thr Thr
130 135 140

Val Leu Thr Gly Ser Leu Ile Thr Lys Ile Gly Met Ala Ala Val Ala
145 150 155 160

Arg Ala Val Thr Leu Met Thr Pro Leu Pro Phe Leu Leu Arg Arg Phe
165 170 175

His Tyr Cys Arg Gly Pro Val Ile Ala His Cys Tyr Cys Glu His Met
180 185 190

Ala Val Val Arg Leu Ala Cys Gly Asp Thr Ser Phe Asn Asn Ile Tyr
195 200 205

Gly Ile Ala Val Ala Met Phe Ile Val Val Leu Asp Leu Leu Phe Val
210 215 220

Ile Leu Ser Tyr Val Phe Ile Leu Gln Ala Val Leu Gln Leu Ala Ser
225 230 235 240

Gln Glu Ala Arg Tyr Lys Ala Phe Gly Thr Cys Val Ser His Ile Gly
245 250 255

Ala Ile Leu Ser Thr Tyr Thr Pro Val Val Ile Ser Ser Val Met His
260 265 270

Arg Val Ala Arg His Ala Ala Pro Arg Val His Ile Leu Leu Ala Ile
275 280 285

Phe Tyr Leu Leu Phe Pro Pro Val Val Asn Pro Ile Ile Tyr Gly Val
290 295 300

Gln Thr Lys Gln Ile Arg Glu Tyr Val Leu Ser Leu Phe Gln Arg Lys
305 310 315 320

Asn Met

<210> 23

<211> 980

<212> DNA

<213> Homo sapiens

<400> 23

ctaaaactaa gagctcctgt ctccctggata ccccagatcc ctgaatatgt taaccctaa 60
taatgcctgc tccgtgccta cctctttccg gctcaactggc atccctggcc tggaaatccct 120
gcacatctgg ctctccatcc cctttggctc catgtacctg gttagctgtgc tggggaaacat 180
aaccatcctg gcagtggtaa ggatggagta cagcctgcat cagcccatgt acttcttcct 240
gtgcattgtt gctgtcattt acttggtcct gtcaacctct accatgccc aactactggc 300
catcttctgg tttggtgccc acaacattgg tggtaatgcc tggggccccc agatgttctt 360
cattcattgc tttgccactg ttgagtcagg catcttcctt gccatggctt ttgatacta 420
tgtggccatc tgtgaccac tgcattcatac ctgtttgctc acccatgctg tggtggtcg 480
tttggggctg gctgcctcc tccgggggggt aatctacatt ggacctctgc ccctagtgtat 540
ttgtctgagg ttggcccttt accacaccca aatcattgcc cattcgtact gtgagcacat 600
ggctgtggtc accttggcat gtggtgtgac atttattgaa gtgttggatc tattctttat 660
catcctatct tataatctta tcccttcagg cagttctaca acttcctct cagaggcccg 720
ctacaaagca tttgggacat gtgtctctca cataggtgcc atcttagcct tctacacacc 780
ttcagtcattc tcttcagtc tgcacccgtgt ggcccgctgt gctgcgccac acgtccacat 840
tctcctcgcc aatttctatc tgctcttccc acccatggtc aatcccattca tctacggcgt 900
taagaccaag cagatccgtg acagtcttgg gagtattccc gagaaaggat gtgtgaatag 960
agagtgagga ataagtggaa 980

<210> 24

<211> 306

<212> PRT

<213> Homo sapiens

<400> 24

Met Leu Thr Pro Asn Asn Ala Cys Ser Val Pro Thr Ser Phe Arg Leu
1 5 10 15

Thr Gly Ile Pro Gly Leu Glu Ser Leu His Ile Trp Leu Ser Ile Pro

20

25

30

Phe Gly Ser Met Tyr Leu Val Ala Val Leu Gly Asn Ile Thr Ile Leu
 35 40 45

Ala Val Val Arg Met Glu Tyr Ser Leu His Gln Pro Met Tyr Phe Phe
 50 55 60

Leu Cys Met Leu Ala Val Ile Asp Leu Val Leu Ser Thr Ser Thr Met
 65 70 75 80

Pro Lys Leu Leu Ala Ile Phe Trp Phe Gly Ala His Asn Ile Gly Val
 85 90 95

Asn Ala Cys Leu Ala Gln Met Phe Phe Ile His Cys Phe Ala Thr Val
 100 105 110

Glu Ser Gly Ile Phe Leu Ala Met Ala Phe Asp His Tyr Val Ala Ile
 115 120 125

Cys Asp Pro Leu His His Thr Leu Leu Leu Thr His Ala Val Val Gly
 130 135 140

Arg Leu Gly Leu Ala Ala Leu Leu Arg Gly Val Ile Tyr Ile Gly Pro
 145 150 155 160

Leu Pro Leu Val Ile Cys Leu Arg Leu Pro Leu Tyr His Thr Gln Ile
 165 170 175

Ile Ala His Ser Tyr Cys Glu His Met Ala Val Val Thr Leu Ala Cys
 180 185 190

Gly Val Thr Phe Ile Glu Val Leu Asp Leu Phe Phe Ile Ile Leu Ser
 195 200 205

Tyr Ile Phe Ile Pro Ser Gly Ser Ser Thr Thr Leu Leu Ser Glu Ala
 210 215 220

Arg Tyr Lys Ala Phe Gly Thr Cys Val Ser His Ile Gly Ala Ile Leu
 225 230 235 240

Ala Phe Tyr Thr Pro Ser Val Ile Ser Ser Val Met His Arg Val Ala
 245 250 255

Arg Cys Ala Ala Pro His Val His Ile Leu Leu Ala Asn Phe Tyr Leu
 260 265 270

Leu Phe Pro Pro Met Val Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys
 275 280 285

Gln Ile Arg Asp Ser Leu Gly Ser Ile Pro Glu Lys Gly Cys Val Asn
 290 295 300

Arg Glu
 305

<210> 25
<211> 980
<212> DNA
<213> Homo sapiens

<400> 25
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tggtgggat tccaggcctg gaacacctgc acatctggat ctccatccct ttctgcttag 120
catatacact ggcctgctt ggaaactgca ctcccttct catcatccag gctgatgcag 180
ccctccatga accccatgtac ctcttctgg ccatgttggc agccatcgac ctggcccttt 240
cctcctcagc actgccccaaa atgcttgccttattctggat cagggatcgg gagataaact 300
tctttgcctg tctggccctg atgttcttcc ttcaactcctt ctccatcatg gagtcagcag 360
tgctgctggc catggccctt gaccgctatg tggctatctg caagccactg cactacacca 420
aggtcctgac tgggtccctc atcaccaaga ttggcatggc tgctgtggcc cgggctgtga 480
caactaatgac tccactcccc ttccctgctga gatgttcca ctactgcccga gcccaggatgta 540
tcgctcactg ctactgtgaa cacatggctg tggtgaggct ggcgtgtggg gacactagct 600
tcaacaatat ctatggcattc gctgtggcca tgtttattgt ggtgttggac ctgctcccttg 660
ttatcctgtc ttatatcttt atttctcagg cagttctact gcttgcctct caggaggccc 720
gctacaaggc atttgggaca tgggtctctc atatagggtc catcttagcc ttctacacaa 780
ctgtggtcat ctcttcagtc atgcaccctgt tagcccccac tgctgcccct catgtccaca 840
tcctccctgc caatttctat ctgctcttcc caccatggt caatcccata atctatggtg 900
tcaagaccaa gcaaatccgt gagagcatct tgggagttt cccaagaaag gatatgtaga 960
gggtgaggatg gagaaagaat 980

<210> 26
<211> 314
<212> PRT
<213> Homo sapiens

<400> 26
Met Ser Ala Ser Asn Ile Thr Leu Thr His Pro Thr Ala Phe Leu Leu
1 5 10 15
Val Gly Ile Pro Gly Leu Glu His Leu His Ile Trp Ile Ser Ile Pro
20 25 30
Phe Cys Leu Ala Tyr Thr Leu Ala Leu Leu Gly Asn Cys Thr Leu Leu
35 40 45
Leu Ile Ile Gln Ala Asp Ala Ala Leu His Glu Pro Met Tyr Leu Phe
50 55 60
Leu Ala Met Leu Ala Ala Ile Asp Leu Val Leu Ser Ser Ser Ala Leu
65 70 75 80
Pro Lys Met Leu Ala Ile Phe Trp Phe Arg Asp Arg Glu Ile Asn Phe
85 90 95
Phe Ala Cys Leu Ala Gln Met Phe Phe Leu His Ser Phe Ser Ile Met
100 105 110
Glu Ser Ala Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile
115 120 125
Cys Lys Pro Leu His Tyr Thr Lys Val Leu Thr Gly Ser Leu Ile Thr
130 135 140

Lys Ile Gly Met Ala Ala Val Ala Arg Ala Val Thr Leu Met Thr Pro
 145 150 155 160
 Leu Pro Phe Leu Leu Arg Cys Phe His Tyr Cys Arg Gly Pro Val Ile
 165 170 175
 Ala His Cys Tyr Cys Glu His Met Ala Val Val Arg Leu Ala Cys Gly
 180 185 190
 Asp Thr Ser Phe Asn Asn Ile Tyr Gly Ile Ala Val Ala Met Phe Ile
 195 200 205
 Val Val Leu Asp Leu Leu Leu Val Ile Leu Ser Tyr Ile Phe Ile Leu
 210 215 220
 Gln Ala Val Leu Leu Leu Ala Ser Gln Glu Ala Arg Tyr Lys Ala Phe
 225 230 235 240
 Gly Thr Cys Val Ser His Ile Gly Ala Ile Leu Ala Phe Tyr Thr Thr
 245 250 255
 Val Val Ile Ser Ser Val Met His Arg Val Ala Arg His Ala Ala Pro
 260 265 270
 His Val His Ile Leu Leu Ala Asn Phe Tyr Leu Leu Phe Pro Pro Met
 275 280 285
 Val Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Ser
 290 295 300
 Ile Leu Gly Val Phe Pro Arg Lys Asp Met
 305 310

<210> 27
 <211> 980
 <212> DNA
 <213> Homo sapiens

<400> 27
 ctaaaaactaa gagctcctgt ctccctggata ccccaagatcc ctgaatatgt taaccctaa 60
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 gcacatctgg ctctccatcc cctttggctc catgtacactg gtatctgtgc tggggaaacat 180
 aaccatccctg gcagtggtaa ggtatggagta cagcctgcat cagcccatgt acttcttcct 240
 gtgcatgttg gctgtcattg acttggctct gtcaacactt accatgccc aactactggc 300
 catcttctgg tttggtgccc acaacattgg tttttatgcc tttttggccc agatgttctt 360
 cattcattgc tttgccactg ttgagtcagg catcttcctt gccatggctt ttgatcacta 420
 tgtggccatc tgtgaccac tgcatac cttgttgctc acccatgctg tggtgggtcg 480
 tttggggctg gctgccctcc tccgggggggt aatctacatt ggacctctgc ccctagtgtat 540
 ttgtctgagg ttgccccctt accacaccca aatcatgcc cattcgtact gtgagcacat 600
 ggctgtggtc accttggcat gtgtgtgac atttattgaa gtgttggatc tattctttat 660
 catccatatct tatatctta tcccttcagg cagttctaca actctccctc cagaggcccg 720
 ctacaaaagca tttgggacat gtgtctctca cataggtgcc atcttagcct tctacacacc 780
 ttcagtcatac tcttcagtc tgcaccgtgt ggcccgctgt gctgcgccac acgtccacat 840
 tctcctcgcc aatttctatc tgctcttccc acccatggtc aatcccatca tctacggcgt 900
 taagaccaag cagatccgtg acagtcttgg gagtattccc gagaaaggat gtgtgaatag 960

agagtgagga ataagtggaa

980

<210> 28

<211> 275

<212> PRT

<213> Homo sapiens

<400> 28

Met Cys Phe Phe Leu Ser Asn Leu Cys Trp Ala Asp Ile Gly Phe Thr
1 5 10 15

Ser Ala Met Val Pro Lys Met Ile Val Asp Met Gln Ser His Ser Arg
20 25 30

Val Ile Ser Tyr Ala Gly Cys Leu Thr Gln Met Ser Phe Phe Val Leu
35 40 45

Phe Ala Cys Ile Glu Asp Met Leu Leu Thr Val Met Ala Tyr Asp Arg
50 55 60

Phe Val Ala Ile Cys His Pro Leu His Tyr Pro Val Ile Met Asn Pro
65 70 75 80

His Leu Gly Val Phe Leu Val Leu Val Ser Phe Phe Leu Ser Leu Leu
85 90 95

Asp Ser Gln Leu His Ser Trp Ile Val Leu Gln Phe Thr Phe Phe Lys
100 105 110

Asn Val Glu Ile Ser Asn Phe Val Cys Asp Pro Ser Gln Leu Leu Asn
115 120 125

Leu Ala Cys Ser Asp Ser Val Ile Asn Ser Ile Phe Ile Tyr Leu Asp
130 135 140

Ser Ile Met Phe Gly Phe Leu Pro Ile Ser Gly Ile Leu Leu Ser Tyr
145 150 155 160

Ala Asn Asn Val Pro Ser Ile Leu Arg Ile Ser Ser Ser Asp Arg Lys
165 170 175

Ser Lys Ala Phe Ser Thr Cys Gly Ser His Leu Ala Val Val Cys Leu
180 185 190

Phe Tyr Gly Thr Gly Ile Gly Val Tyr Leu Thr Ser Ala Val Ser Pro
195 200 205

Pro Pro Arg Asn Gly Val Val Ala Ser Val Met Tyr Ala Val Val Thr
210 215 220

Pro Met Leu Asn Pro Phe Ile Tyr Ser Leu Arg Asn Arg Asp Ile Gln
225 230 235 240

Ser Ala Leu Trp Arg Leu Arg Ser Arg Thr Val Glu Ser His Asp Leu
245 250 255

Leu Ser Gln Asp Leu Leu His Pro Phe Ser Cys Val Gly Glu Lys Gly
260 265 270

Gln Pro His
275

<210> 29
<211> 840
<212> DNA
<213> Homo sapiens

<400> 29
tcatcattct catcttcctg gattctcgcc ttcacactcc catgtatTTT tttcttagaa 60
atctctcctt tgcagatctc tggTTCTcta ctgcattgt cctcaagtgt ttggTtcact 120
tcttggtaaa gaggaaaacc attttttt atgggtgtat gacacagata attgtttc 180
ttctggTTgg gtgtacagag tggcgctgc tggcagtgtat gtcctatgac cggtatgtgg 240
ctgtctgcaa gcccctgtac tactctacca tcatgacaca acgggtgtgt ctctggctgt 300
ccttcaggTC ctgggcccagt gggcactag tggTTTtagt agataccagc ttactttcc 360
atcttcccta ctggggacag aatataatca atcactactt ttgtgaacct cctgcctcc 420
tgaagctggc ttccatagac acttacagca cagaaatggc catctttca atgggcgtgg 480
taatccctt ggcccctgtc tccctgattc ttggTTCTta ttggaatatt atctccactg 540
ttatccagat gcagtctggg gaaggagac tcaaggctt ttccacctgt ggctccatc 600
ttattgtgt tgccttcc tatgggtcag gaatattcac ctacatgcga ccaaactcca 660
agactacaaa agaactggat aaaatgatat ctgtgttcta tacagcggtg actccaatgt 720
tgaaccccat aatttatagc ttgaggaaca aagatgtcaa agggctctc agggaaactag 780
ttgggagaaa gtgTTCTct cataggcagt gacctctgag tctgactttt agagctatgg 840

<210> 30
<211> 256
<212> PRT
<213> Homo sapiens

<400> 30
Met Tyr Phe Phe Leu Arg Asn Leu Ser Phe Ala Asp Leu Cys Phe Ser
1 5 10 15

Thr Ser Ile Val Pro Gln Val Leu Val His Phe Leu Val Lys Arg Lys
20 25 30

Thr Ile Ser Phe Tyr Gly Cys Met Thr Gln Ile Ile Val Phe Leu Leu
35 40 45

Val Gly Cys Thr Glu Cys Ala Leu Leu Ala Val Met Ser Tyr Asp Arg
50 55 60

Tyr Val Ala Val Cys Lys Pro Leu Tyr Tyr Ser Thr Ile Met Thr Gln
65 70 75 80

Arg Val Cys Leu Trp Leu Ser Phe Arg Ser Trp Ala Ser Gly Ala Leu
85 90 95

Val Ser Leu Val Asp Thr Ser Phe Thr Phe His Leu Pro Tyr Trp Gly
100 105 110

Gln Asn Ile Ile Asn His Tyr Phe Cys Glu Pro Pro Ala Leu Lys

115

120

125

Leu Ala Ser Ile Asp Thr Tyr Ser Thr Glu Met Ala Ile Phe Ser Met
130 135 140

Gly Val Val Ile Leu Leu Ala Pro Val Ser Leu Ile Leu Gly Ser Tyr
145 150 155 160

Trp Asn Ile Ile Ser Thr Val Ile Gln Met Gln Ser Gly Glu Gly Arg
165 170 175

Leu Lys Ala Phe Ser Thr Cys Gly Ser His Leu Ile Val Val Val Leu
180 185 190

Phe Tyr Gly Ser Gly Ile Phe Thr Tyr Met Arg Pro Asn Ser Lys Thr
195 200 205

Thr Lys Glu Leu Asp Lys Met Ile Ser Val Phe Tyr Thr Ala Val Thr
210 215 220

Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys
225 230 235 240

Gly Ala Leu Arg Lys Leu Val Gly Arg Lys Cys Phe Ser His Arg Gln
245 250 255

<210> 31
<211> 993
<212> DNA
<213> Homo sapiens

<400> 31

gccaaacagg taaacaggca aaaatatcaa tgggagaaga aaaccaaacc tttgtgtcca 60
agtttatctt cctgggtctt tcacaggact tgcagaccca gatcctgcta tttatccctt 120
tcctcatcat ttatctgctg accgtgctt gaaaccagct catcatcatt ctcatcttcc 180
tggattctcg ccttcacact cccatgtatt tttttcttag aaatctctcc tttgcagatc 240
tctgtttctc tactagcatt gtcctcaag tgggtttca cttcttggtt aagagaaaa 300
ccatttcttt ttatgggtgt atgacacaga taattgtctt tcttctgggtt gggtgtacag 360
agtgtgcgtc gctggccgtg atgtcctatg accggatgtt ggctgtctgc aagccctgt 420
actactctac catcatgaca caacgggtgt gtctctggct gtccttcagg tcctggcca 480
gtggggcact agtgtctta gtagatacca gctttacttt ccatcttccc tactggggac 540
agaatataat caatcaactac ttttgtaac ctcctccctt cctgaagctg gttccatag 600
acacttacag cacagaaatg gccatctttt caatggcggtt ggttaatcctc ctggccctgt 660
tctccctgat tcttgggtct tattggata ttatctccac tggatccacat atgcagtc 720
gggaagggag actcaaggct tttccacact gttggccctt tcttattgtt gttgtcctct 780
tctatgggtc aggaatattc acctacatgc gaccaaactc caagactaca aaagaactgg 840
ataaaatgtat atctgtgttc tatacagcgg tgactccaat gtgaaacccc ataattata 900
gcttgaggaa caaagatgtc aaaggggctc tcagggaaact agttggaga aagtgttct 960
ctcataggca gtgacctctg agtctgactt tta 993

<210> 32

<211> 314

<212> PRT

<213> Homo sapiens

<400> 32

Met Gly Glu Glu Asn Gln Thr Phe Val Ser Lys Phe Ile Phe Leu Gly
1 5 10 15

Leu Ser Gln Asp Leu Gln Thr Gln Ile Leu Leu Phe Ile Leu Phe Leu
20 25 30

Ile Ile Tyr Leu Leu Thr Val Leu Gly Asn Gln Leu Ile Ile Ile Leu
35 40 45

Ile Phe Leu Asp Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Arg
50 55 60

Asn Leu Ser Phe Ala Asp Leu Cys Phe Ser Thr Ser Ile Val Pro Gln
65 70 75 80

Val Leu Val His Phe Leu Val Lys Arg Lys Thr Ile Ser Phe Tyr Gly
85 90 95

Cys Met Thr Gln Ile Ile Val Phe Leu Leu Val Gly Cys Thr Glu Cys
100 105 110

Ala Leu Leu Ala Val Met Ser Tyr Asp Arg Tyr Val Ala Val Cys Lys
115 120 125

Pro Leu Tyr Tyr Ser Thr Ile Met Thr Gln Arg Val Cys Leu Trp Leu
130 135 140

Ser Phe Arg Ser Trp Ala Ser Gly Ala Leu Val Ser Leu Val Asp Thr
145 150 155 160

Ser Phe Thr Phe His Leu Pro Tyr Trp Gly Gln Asn Ile Ile Asn His
165 170 175

Tyr Phe Cys Glu Pro Pro Ala Leu Leu Lys Leu Ala Ser Ile Asp Thr
180 185 190

Tyr Ser Thr Glu Met Ala Ile Phe Ser Met Gly Val Val Ile Leu Leu
195 200 205

Ala Pro Val Ser Leu Ile Leu Gly Ser Tyr Trp Asn Ile Ile Ser Thr
210 215 220

Val Ile Gln Met Gln Ser Gly Glu Gly Arg Leu Lys Ala Phe Ser Thr
225 230 235 240

Cys Gly Ser His Leu Ile Val Val Leu Phe Tyr Gly Ser Gly Ile
245 250 255

Phe Thr Tyr Met Arg Pro Asn Ser Lys Thr Thr Lys Glu Leu Asp Lys
260 265 270

Met Ile Ser Val Phe Tyr Thr Ala Val Thr Pro Met Leu Asn Pro Ile
275 280 285

Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Gly Ala Leu Arg Lys Leu
290 295 300

Val Gly Arg Lys Cys Phe Ser His Arg Gln
305 310

<210> 33
<211> 1003
<212> DNA
<213> Homo sapiens

<400> 33
atctgtcct tgggtccac gggaaagcatg tccataacca aagcctggaa cagctcatca 60
gtgaccatgt tcatacctcct gggattcaca gaccatccag aactccaggc ctcctctt 120
gtgacccctcc tggcatcta tcttaccacc ctggcttggaa acctggccct cattttctg 180
atcagaggtg acacccatct gcacacaccc atgtacttct tcctaagcaa cttatcttc 240
attgacatct gctacttcc tgctgtggct cccaatatgc tcactgactt cttctgggag 300
cagaagacca tatcatttgc gggctgtgct gtcagttt ttttcttgc cggcatgggt 360
ctgtctgagt gcctcctcct gactgctatg gcatacggacc gatatgcggc catctccaggc 420
cccccctctt accccactat catgacccagg gcctctgtt cacgcatggt ggttggggca 480
tatgttggtg gcttcctgag ctccctgtatc caggccagct ccatatttag gtttacttt 540
tgcggaccac acatcatcaa ccaccccttc tgcgacccctt caccaggctt ggctctgtct 600
tgctctgaca ctttcctcag tcaagtggtg aatttcctcg tgggtgtcac tgcggagga 660
acatcggtcc tccaaacttctt tatctccat gtttacatag tgcgtcggtt cctgaagatc 720
ccttcaggcagg agggccgatg gaaagcctgc aacacgtgtt cctcgcatct gatgggtgg 780
actctgctgt ttgggacagg cttttctgt tacttgcac ccagctccag ctacttgcta 840
ggcaggagaca aggtgggttc tgtttctat tcattggta tccccatgct gaaccctctc 900
atttacagtt tgaggaacaa agagatcaag gatgcctgtt gaaagggtttt ggaaaggaag 960
aaagtgtttt ctttagtcat gcgtagaaac ttatttatcc aaa 1003

<210> 34
<211> 315
<212> PRT
<213> Homo sapiens

<400> 34
Met Ser Ile Thr Lys Ala Trp Asn Ser Ser Ser Val Thr Met Phe Ile
1 5 10 15

Leu Leu Gly Phe Thr Asp His Pro Glu Leu Gln Ala Leu Leu Phe Val
20 25 30

Thr Phe Leu Gly Ile Tyr Leu Thr Thr Leu Ala Trp Asn Leu Ala Leu
35 40 45

Ile Phe Leu Ile Arg Gly Asp Thr His Leu His Thr Pro Met Tyr Phe
50 55 60

Phe Leu Ser Asn Leu Ser Phe Ile Asp Ile Cys Tyr Ser Ser Ala Val
65 70 75 80

Ala Pro Asn Met Leu Thr Asp Phe Phe Trp Glu Gln Lys Thr Ile Ser
85 90 95

Phe Val Gly Cys Ala Ala Gln Phe Phe Phe Val Gly Met Gly Leu
 100 105 110
 Ser Glu Cys Leu Leu Leu Thr Ala Met Ala Tyr Asp Arg Tyr Ala Ala
 115 120 125
 Ile Ser Ser Pro Leu Leu Tyr Pro Thr Ile Met Thr Gln Gly Leu Cys
 130 135 140
 Thr Arg Met Val Val Gly Ala Tyr Val Gly Gly Phe Leu Ser Ser Leu
 145 150 155 160
 Ile Gln Ala Ser Ser Ile Phe Arg Leu His Phe Cys Gly Pro Asn Ile
 165 170 175
 Ile Asn His Phe Phe Cys Asp Leu Pro Pro Val Leu Ala Leu Ser Cys
 180 185 190
 Ser Asp Thr Phe Leu Ser Gln Val Val Asn Phe Leu Val Val Val Thr
 195 200 205
 Val Gly Gly Thr Ser Phe Leu Gln Leu Leu Ile Ser Tyr Gly Tyr Ile
 210 215 220
 Val Ser Ala Val Leu Lys Ile Pro Ser Ala Glu Gly Arg Trp Lys Ala
 225 230 235 240
 Cys Asn Thr Cys Ala Ser His Leu Met Val Val Thr Leu Leu Phe Gly
 245 250 255
 Thr Ala Leu Phe Val Tyr Leu Arg Pro Ser Ser Ser Tyr Leu Leu Gly
 260 265 270
 Arg Asp Lys Val Val Ser Val Phe Tyr Ser Leu Val Ile Pro Met Leu
 275 280 285
 Asn Pro Leu Ile Tyr Ser Leu Arg Asn Lys Glu Ile Lys Asp Ala Leu
 290 295 300
 Trp Lys Val Leu Glu Arg Lys Lys Val Phe Ser
 305 310 315

<210> 35
 <211> 956
 <212> DNA
 <213> Homo sapiens

<400> 35
 aagcatgtcc ataaccaaag cctggaacag ctcatcagtg accatgttca tcctcctggg 60
 attcacagac catccagaac tccaggccct cctcttgtg accttcctgg gcatctatct 120
 taccaccctg gcctggaacc tggccctcat ttttctggc agaggtgaca cccatctgca 180
 cacacccatg tacttcttcc taagcaactt atctttcatt gacatctgct actcttctgc 240
 tgtgctccc aatatgctca ctgacttctt ctgggagcag aagaccatat catttgggg 300
 ctgtgctgct cagtttttt tctttgtcgg catgggtctg tctgagtgcc tcctcctgac 360
 tgctatggca tacgaccgat atgcagccat ctccagcccc cttctctacc ccactatcat 420
 gaccaggc ctctgtacac gcatgggtt tggggcatat gttgggtggct tcctgagctc 480

cctgatccag gccagctcca tatttaggct tcactttgc ggacccaaca tcatacca 540
cttcttctgc gaccccccac cagtcctggc tctgtcttgc tctgacaccc tcctca 600
agtggtaat ttccctcggtt gggtcaactgt cgaggaaaca tcgttcctcc aactccttat 660
ctccatggt tacatagtgt ctgcggctt gaagatccct tcagcagagg gccgatggaa 720
agcctgcaac acgtgtgcct cgcacatctgat ggtggtaact ctgctgtttg ggacagccct 780
tttcgtgtac ttgcgaccca gctccagcta cttgcttaggc agggacaaag tgggtctgt 840
tttctattca ttggtgatcc ccatgctgaa ccctctcatt tacagtttga ggaacaaaga 900
gatcaaggat gcccgttggaa aggtgttggaa aaggaagaaa gtgtttctt aggtca 956

<210> 36
<211> 315
<212> PRT
<213> Homo sapiens

<400> 36
Met Ser Ile Thr Lys Ala Trp Asn Ser Ser Ser Val Thr Met Phe Ile
1 5 10 15
Leu Leu Gly Phe Thr Asp His Pro Glu Leu Gln Ala Leu Leu Phe Val
20 25 30
Thr Phe Leu Gly Ile Tyr Leu Thr Thr Leu Ala Trp Asn Leu Ala Leu
35 40 45
Ile Phe Leu Val Arg Gly Asp Thr His Leu His Thr Pro Met Tyr Phe
50 55 60
Phe Leu Ser Asn Leu Ser Phe Ile Asp Ile Cys Tyr Ser Ser Ala Val
65 70 75 80
Ala Pro Asn Met Leu Thr Asp Phe Phe Trp Glu Gln Lys Thr Ile Ser
85 90 95
Phe Val Gly Cys Ala Ala Gln Phe Phe Phe Val Gly Met Gly Leu
100 105 110
Ser Glu Cys Leu Leu Leu Thr Ala Met Ala Tyr Asp Arg Tyr Ala Ala
115 120 125
Ile Ser Ser Pro Leu Leu Tyr Pro Thr Ile Met Thr Gln Gly Leu Cys
130 135 140
Thr Arg Met Val Val Gly Ala Tyr Val Gly Gly Phe Leu Ser Ser Leu
145 150 155 160
Ile Gln Ala Ser Ser Ile Phe Arg Leu His Phe Cys Gly Pro Asn Ile
165 170 175
Ile Asn His Phe Phe Cys Asp Leu Pro Pro Val Leu Ala Leu Ser Cys
180 185 190
Ser Asp Thr Phe Leu Ser Gln Val Val Asn Phe Leu Val Val Val Thr
195 200 205
Val Gly Gly Thr Ser Phe Leu Gln Leu Leu Ile Ser Tyr Gly Tyr Ile
210 215 220

Val Ser Ala Val Leu Lys Ile Pro Ser Ala Glu Gly Arg Trp Lys Ala
225 230 235 240

Cys Asn Thr Cys Ala Ser His Leu Met Val Val Thr Leu Leu Phe Gly
245 250 255

Thr Ala Leu Phe Val Tyr Leu Arg Pro Ser Ser Ser Tyr Leu Leu Gly
260 265 270

Arg Asp Lys Val Val Ser Val Phe Tyr Ser Leu Val Ile Pro Met Leu
275 280 285

Asn Pro Leu Ile Tyr Ser Leu Arg Asn Lys Glu Ile Lys Asp Ala Leu
290 295 300

Trp Lys Val Leu Glu Arg Lys Lys Val Phe Ser
305 310 315

<210> 37

<211> 1050

<212> DNA

<213> Homo sapiens

<400> 37

ctttctggaa ataaacccat ttcccttctca ttcttttct cagcagatgg caccaagcag 60
atccatggaa gtgagtggaa accacacctc tgtggccatg tttgttctcc taggactctc 120
agataaaaaa gagctgcagc tcacccctt tccagtcctc ctggtgatct accttgtac 180
cctgatttgg aacatgggtc ttatcatcct catcagaata gactctcatc tgaacacacc 240
catgtacttt tttctcagtt tcctctcatt tacagacatc tgctattctt ctaccatcag 300
cccaaggatg ctttcagact tctaaaaga taagaagaca atttccttc ttgcctgtgc 360
cactcagttat tttcttgggg cctggatgag tctggctgag tgctgcctct tggtcatcat 420
ggcctgtgac agatatgtgg ccattggcag ccccctgcag tactcagcaa tcatggtccc 480
tagtatctgt tggaaagatgg tagctggagt ctgtgggggt ggattcctta gtagcttagt 540
tcatacagtc ctttgcttta atctctacta ctgtggccca aatatcattc aacatttctt 600
ctgtAACACA cttcagatTTA tttccttgc ttgctccaac ccctttatca gccaaatgat 660
tcttttctg gaagctatTTT ttgttgggtt gggctcttg ctgttatcc ttttgcctta 720
tggtttcatt gtagcttcca tactgaaaat atcatcaacc aaatgttgc ccaaggcctt 780
caatacctgt gcctcccacc tggcagctgt ggctctttc tatggcacag ccctttctgt 840
gtacatgcat cctagctcta gccactccat gaaggaggac aaggtgctct cagtgttcta 900
tgttatactt atccccatgt taaacactct gatctatagt ttgaggaaca aggaaatcaa 960
agaggccctc aagagggta caaatggagc aacatattta cattagtaag aacaacattt 1020
ggtagatat tgtagtttct ataacgaaga 1050

<210> 38

<211> 319

<212> PRT

<213> Homo sapiens

<400> 38

Met Ala Pro Ser Arg Ser Met Glu Val Ser Gly Asn His Thr Ser Val
1 5 10 15

Ala Met Phe Val Leu Leu Gly Leu Ser Asp Glu Lys Glu Leu Gln Leu
20 25 30

Ile Leu Phe Pro Val Phe Leu Val Ile Tyr Leu Val Thr Leu Ile Trp
 35 40 45
 Asn Met Gly Leu Ile Ile Leu Ile Arg Ile Asp Ser His Leu Asn Thr
 50 55 60 80
 Pro Met Tyr Phe Phe Leu Ser Phe Leu Ser Phe Thr Asp Ile Cys Tyr
 65 70 75 80
 Ser Ser Thr Ile Ser Pro Arg Met Leu Ser Asp Phe Leu Lys Asp Lys
 85 90 95
 Lys Thr Ile Ser Phe Leu Ala Cys Ala Thr Gln Tyr Phe Leu Gly Ala
 100 105 110
 Trp Met Ser Leu Ala Glu Cys Cys Leu Leu Val Ile Met Ala Cys Asp
 115 120 125
 Arg Tyr Val Ala Ile Gly Ser Pro Leu Gln Tyr Ser Ala Ile Met Val
 130 135 140
 Pro Ser Ile Cys Trp Lys Met Val Ala Gly Val Cys Gly Gly Phe
 145 150 155 160
 Leu Ser Ser Leu Val His Thr Val Pro Cys Phe Asn Leu Tyr Tyr Cys
 165 170 175
 Gly Pro Asn Ile Ile Gln His Phe Phe Cys Asn Thr Leu Gln Ile Ile
 180 185 190
 Ser Leu Ser Cys Ser Asn Pro Phe Ile Ser Gln Met Ile Leu Phe Leu
 195 200 205
 Glu Ala Ile Phe Val Gly Leu Gly Ser Leu Leu Val Ile Leu Leu Ser
 210 215 220
 Tyr Gly Phe Ile Val Ala Ser Ile Leu Lys Ile Ser Ser Thr Lys Cys
 225 230 235 240
 Cys Ala Lys Ala Phe Asn Thr Cys Ala Ser His Leu Ala Ala Val Ala
 245 250 255
 Leu Phe Tyr Gly Thr Ala Leu Ser Val Tyr Met His Pro Ser Ser Ser
 260 265 270
 His Ser Met Lys Glu Asp Lys Val Leu Ser Val Phe Tyr Val Ile Leu
 275 280 285
 Ile Pro Met Leu Asn Thr Leu Ile Tyr Ser Leu Arg Asn Lys Glu Ile
 290 295 300
 Lys Glu Ala Leu Lys Arg Val Thr Asn Gly Ala Thr Tyr Leu His
 305 310 315

<211> 1050
<212> DNA
<213> Homo sapiens

<400> 39
aaagtaaaga ctttatgcag gaagcagcct atggctgtag gaaggaacaa cacaattgtg 60
acaaaattca ttctcctggg acttcagac catcctcaa tgaagattt cctttcatg 120
ttatttctgg ggctctaccc cctgacgttgc gcctgaaact taagcctcat tgccttcatt 180
aagatggact ctcacctgca catgcccatt tacttcttcc tcagtaaccc tgccttcctg 240
gacatctgct atgtgtcctc caccggccct aagatgtgt ctgacatcat cacagagcag 300
aaaaccattt cctttgtgg ctgtgccact cagtaacttgc tcttctgtgg gatggggctg 360
actgaatgtt ttctcctggc agctatggcc tatgaccggat atgctgcaat ctgcaacccc 420
ttgcttaca cagtcctcat atccatata ctttgtttaa agatgggtt gggccctat 480
gtgggtggat tccttagttc tttcattgaa acataacttg tctatcagca tgatttctgt 540
gggcctata tcatcaacca cttttctgt gaccccttc cagtcctggc tctgtccctgc 600
tctgataacct tcaccagcga ggtgggtgacc ttcatagtc gtgttgcgt tggaaatagt 660
tctgtgttag tggtcctcat ctcttatggt tacattgttg ctgctgttgtaa gaagatcagc 720
tcagctacag gtaggacaaa ggccttcagc acttgcgttgcct ctcacctgac tgctgtgacc 780
ctcttctatg gttctggatt cttcatgtac atgcacccca gttccagacta ctccctaaac 840
agggacaagg tgggtgtccat attctatgcc ttgggtatcc ccgtggtgaa tcccatcatc 900
tacagttta ggaataagga gataaaaaat gccatgagga aagccatgga aagggacccc 960
gggatttctc acggtgaccattt atgaccttgg gctaattttt acaatgaagc 1020
tgtgagcttag gtgaattgtg cagacattta 1050

<210> 40
<211> 324
<212> PRT
<213> Homo sapiens

<400> 40
Met Ala Val Gly Arg Asn Asn Thr Ile Val Thr Lys Phe Ile Leu Leu
1 5 10 15

Gly Leu Ser Asp His Pro Gln Met Lys Ile Phe Leu Phe Met Leu Phe
20 25 30

Leu Gly Leu Tyr Leu Leu Thr Leu Ala Trp Asn Leu Ser Leu Ile Ala
35 40 45

Leu Ile Lys Met Asp Ser His Leu His Met Pro Met Tyr Phe Phe Leu
50 55 60

Ser Asn Leu Ser Phe Leu Asp Ile Cys Tyr Val Ser Ser Thr Ala Pro
65 70 75 80

Lys Met Leu Ser Asp Ile Ile Thr Glu Gln Lys Thr Ile Ser Phe Val
85 90 95

Gly Cys Ala Thr Gln Tyr Phe Val Phe Cys Gly Met Gly Leu Thr Glu
100 105 110

Cys Phe Leu Leu Ala Ala Met Ala Tyr Asp Arg Tyr Ala Ala Ile Cys
115 120 125

Asn Pro Leu Leu Tyr Thr Val Leu Ile Ser His Thr Leu Cys Leu Lys
130 135 140

Met Val Val Gly Ala Tyr Val Gly Gly Phe Leu Ser Ser Phe Ile Glu
 145 150 155 160
 Thr Tyr Ser Val Tyr Gln His Asp Phe Cys Gly Pro Tyr Met Ile Asn
 165 170 175
 His Phe Phe Cys Asp Leu Pro Pro Val Leu Ala Leu Ser Cys Ser Asp
 180 185 190
 Thr Phe Thr Ser Glu Val Val Thr Phe Ile Val Ser Val Val Val Gly
 195 200 205
 Ile Val Ser Val Leu Val Val Leu Ile Ser Tyr Gly Tyr Ile Val Ala
 210 215 220
 Ala Val Val Lys Ile Ser Ser Ala Thr Gly Arg Thr Lys Ala Phe Ser
 225 230 235 240
 Thr Cys Ala Ser His Leu Thr Ala Val Thr Leu Phe Tyr Gly Ser Gly
 245 250 255
 Phe Phe Met Tyr Met Arg Pro Ser Ser Ser Tyr Ser Leu Asn Arg Asp
 260 265 270
 Lys Val Val Ser Ile Phe Tyr Ala Leu Val Ile Pro Val Val Asn Pro
 275 280 285
 Ile Ile Tyr Ser Phe Arg Asn Lys Glu Ile Lys Asn Ala Met Arg Lys
 290 295 300
 Ala Met Glu Arg Asp Pro Gly Ile Ser His Gly Gly Pro Phe Ile Phe
 305 310 315 320
 Met Thr Leu Gly

<210> 41
 <211> 980
 <212> DNA
 <213> Homo sapiens

<400> 41
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 caactttgtc gggaaacctc ctcatcatgg tcactgttac ctgtaatct cgccttcaca 180
 cggccatgtt tttttgttc cataatttat ctattggcga tatctgttcc tcttccatca 240
 cagtgcacca ggttctgtg gacctctgt ctgaaagaaa gaccatctcc ttcaatcatt 300
 gcttcactca gatgttctta ttccacctta ttggagggtt ggatgtattt tctcttcgg 360
 ttagatggcatt ggatcgatat gtggccatct ccaagccct gcactatgcg actatcatga 420
 gtagagacca ttgcattggg ctacacagtgg ctgcctggg ggggggctt gtccactcca 480
 tcgtgcagat ttccctgtt ctcacttcc ctttctgcgg accaatgtt cttgacactt 540
 tctactgtga tggccacccgg gtctcaaac tggccatatac agacatttt atacttgaac 600
 tactaatgt ttccaacaat ggactgtca ccacactgtg gttttctgt ctcctgggt 660
 cctacatagt catattatca ttacccaagt ctcaggcagg agagggcagg aggaagcca 720
 tctccacactg caccccccac atcaactgtgg tgaccctgca tttcgtgccc tgcacatcatg 780

tctatgcccc gccc ttca ct gccc tccca tggataaggc catctctgtc accttcactg 840
tcatctcccc tctgctcaac cccttgatct acactctgag gaaccatgag atgaagtcag 900
ccatgaggag actgaagaga agacttgtgc cttctgatag aaaatagaaa aaaaaatcct 960
cagcttca tcaccaaaga 980

<210> 42
<211> 311
<212> PRT
<213> Homo sapiens

<400> 42
Met Glu Met Glu Asn Cys Thr Arg Val Lys Glu Phe Ile Phe Leu Gly
1 5 10 15

Leu Thr Gln Asn Arg Glu Val Ser Leu Val Leu Phe Leu Phe Leu Leu
20 25 30

Leu Val Tyr Val Thr Thr Leu Leu Gly Asn Leu Leu Ile Met Val Thr
35 40 45

Val Thr Cys Glu Ser Arg Leu His Thr Pro Met Tyr Phe Leu Leu His
50 55 60

Asn Leu Ser Ile Ala Asp Ile Cys Phe Ser Ser Ile Thr Val Pro Lys
65 70 75 80

Val Leu Val Asp Leu Leu Ser Glu Arg Lys Thr Ile Ser Phe Asn His
85 90 95

Cys Phe Thr Gln Met Phe Leu Phe His Leu Ile Gly Gly Val Asp Val
100 105 110

Phe Ser Leu Ser Val Met Ala Leu Asp Arg Tyr Val Ala Ile Ser Lys
115 120 125

Pro Leu His Tyr Ala Thr Ile Met Ser Arg Asp His Cys Ile Gly Leu
130 135 140

Thr Val Ala Ala Trp Leu Gly Gly Phe Val His Ser Ile Val Gln Ile
145 150 155 160

Ser Leu Leu Leu Pro Leu Pro Phe Cys Gly Pro Asn Val Leu Asp Thr
165 170 175

Phe Tyr Cys Asp Val His Arg Val Leu Lys Leu Ala His Thr Asp Ile
180 185 190

Phe Ile Leu Glu Leu Leu Met Ile Ser Asn Asn Gly Leu Leu Thr Thr
195 200 205

Leu Trp Phe Phe Leu Leu Val Ser Tyr Ile Val Ile Leu Ser Leu
210 215 220

Pro Lys Ser Gln Ala Gly Glu Gly Arg Arg Lys Ala Ile Ser Thr Cys
225 230 235 240

Thr Ser His Ile Thr Val Val Thr Leu His Phe Val Pro Cys Ile Tyr
245 250 255

Val Tyr Ala Arg Pro Phe Thr Ala Leu Pro Met Asp Lys Ala Ile Ser
260 265 270

Val Thr Phe Thr Val Ile Ser Pro Leu Leu Asn Pro Leu Ile Tyr Thr
275 280 285

Leu Arg Asn His Glu Met Lys Ser Ala Met Arg Arg Leu Lys Arg Arg
290 295 300

Leu Val Pro Ser Asp Arg Lys
305 310

<210> 43

<211> 980

<212> DNA

<213> Homo sapiens

<400> 43

gaaagagaaa acatgattca atggagttgg gaaatgtcac cagagtaaaa gaattttat 60
ttctggact tactcaatcc caagaccaga gtttggctt gtttctttt ttatgtctt 120
tgtacatgac gactctgctg ggaaacctcc tcatacatggt caccgtgacc tgtgagtctc 180
gccttcacac ccccatgtac ttccctgctcc gcaatctagc catccttgac atctgctt 240
cctccacaac tgctcctaaa gtcttgctgg accttctgtc aaagaaaaag accatatcct 300
atacaagctg catgacacacat atatttctct tccacccct tggtggggca gacattttt 360
ctctctctgt gatggcggtt gactgctaca tggccatctc caagccctg cactatgtga 420
ccatcatgag tagagggcaa tgcaactgccc tcatactctgc ctcttggatg gggggctttg 480
tccactccat cgtcagatc tccctgttgc tgcctctccc ttctctgttgc cccaatgttc 540
ttgacacttt ctactgcgat gtcccccaagg tcctcaaact cacttgcact gacactttt 600
ctcttgagtt cttgatgatt tccaaacaatg gcctggtcac taccctgtgg tttatcttcc 660
tgcttggtc ctacacagtc atcctaataatga cgctgaggtc tcaggcagga gggggcagga 720
ggaaagccat ctccacttgc acctccccaca tcactgttgc gaccctgcat ttgtgcct 780
gcacatctatgt ctatgccccgg cccttcactg ccctccccac agaaaaaggcc atctctgtca 840
ccttcactgt catctccct ctgctgaacc ctttgatcta cactctgagg aaccaggaaa 900
tgaagtcaagc catgagaaga ctgaagagaa gactcgtgcc ttctgaaagg gaatagaaaa 960
caaatccagg ccaggcgcgg 980

<210> 44

<211> 311

<212> PRT

<213> Homo sapiens

<400> 44

Met Glu Leu Gly Asn Val Thr Arg Val Lys Glu Phe Ile Phe Leu Gly
1 5 10 15

Leu Thr Gln Ser Gln Asp Gln Ser Leu Val Leu Phe Leu Phe Leu Cys
20 25 30

Leu Val Tyr Met Thr Thr Leu Leu Gly Asn Leu Leu Ile Met Val Thr
35 40 45

Val Thr Cys Glu Ser Arg Leu His Thr Pro Met Tyr Phe Leu Leu Arg

50

55

60

Asn	Leu	Ala	Ile	Leu	Asp	Ile	Cys	Phe	Ser	Ser	Thr	Thr	Ala	Pro	Lys
65															80
Val	Leu	Leu	Asp	Leu	Leu	Ser	Lys	Lys	Lys	Thr	Ile	Ser	Tyr	Thr	Ser
															85 90 95
Cys	Met	Thr	Gln	Ile	Phe	Leu	Phe	His	Leu	Leu	Gly	Gly	Ala	Asp	Ile
															100 105 110
Phe	Ser	Leu	Ser	Val	Met	Ala	Phe	Asp	Cys	Tyr	Met	Ala	Ile	Ser	Lys
															115 120 125
Pro	Leu	His	Tyr	Val	Thr	Ile	Met	Ser	Arg	Gly	Gln	Cys	Thr	Ala	Leu
															130 135 140
Ile	Ser	Ala	Ser	Trp	Met	Gly	Gly	Phe	Val	His	Ser	Ile	Val	Gln	Ile
															145 150 155 160
Ser	Leu	Leu	Leu	Pro	Leu	Pro	Phe	Cys	Gly	Pro	Asn	Val	Leu	Asp	Thr
															165 170 175
Phe	Tyr	Cys	Asp	Val	Pro	Gln	Val	Leu	Lys	Leu	Thr	Cys	Thr	Asp	Thr
															180 185 190
Phe	Ala	Leu	Glu	Phe	Leu	Met	Ile	Ser	Asn	Asn	Gly	Leu	Val	Thr	Thr
															195 200 205
Leu	Trp	Phe	Ile	Phe	Leu	Leu	Val	Ser	Tyr	Thr	Val	Ile	Leu	Met	Thr
															210 215 220
Leu	Arg	Ser	Gln	Ala	Gly	Gly	Gly	Arg	Arg	Lys	Ala	Ile	Ser	Thr	Cys
															225 230 235 240
Thr	Ser	His	Ile	Thr	Val	Val	Thr	Leu	His	Phe	Val	Pro	Cys	Ile	Tyr
															245 250 255
Val	Tyr	Ala	Arg	Pro	Phe	Thr	Ala	Leu	Pro	Thr	Glu	Lys	Ala	Ile	Ser
															260 265 270
Val	Thr	Phe	Thr	Val	Ile	Ser	Pro	Leu	Leu	Asn	Pro	Leu	Ile	Tyr	Thr
															275 280 285
Leu	Arg	Asn	Gln	Glu	Met	Lys	Ser	Ala	Met	Arg	Arg	Leu	Lys	Arg	Arg
															290 295 300
Leu	Val	Pro	Ser	Glu	Arg	Glu									
															305 310

<210> 45
 <211> 1023
 <212> DNA
 <213> Homo sapiens

<400> 45

cttcatcaaa ggtaggacct ggaagagagt catccccatc atggaccaga tcaaccacac 60
 taatgtgaag gagttttct tcctggaact tacacgttcc cgagagctgg agttttctt 120
 gtttgggtc ttcttgcgt tggatgttagc aacagtctg ggaatgcac tcattgttgt 180
 cactattacc tggatgtccc gcctacacac tcctatgtac ttctcttgc ggaacaaatc 240
 agtctggac atcgaaaa catctatcac cgtccccaaag ttctgggtgg atctttatc 300
 agacaggaaa accatctcct acaatgactg catggcacag atcttttct tccacttgc 360
 tggggggca gatattttt tcctctctgt gatggcctat gacagatacc ttgcaatcgc 420
 caagccccctg cactatgtga ccatgatgag gaaagaggtg tgggtggct tgggtggc 480
 ttcttgggtg agtgggtggtt tgcatcaat catccaggtt attctgatgc ttccattccc 540
 ctctgtggc cccaaacacac tggatgcctt ctactttat gtgctccagg tggtaaaact 600
 ggcctgcact gacaccttg ctggagct ttcatgatc tctaacaacg gactggtgac 660
 cctgctctgg ttccctctgc tcctgggctc ctacactgtc attctggta tgctgagatc 720
 ccactctggg gaggggcgg acaaggccct ctccacgtgc acgtcccaca tgctgggt 780
 gacttac ttcgtgcctt gtgttacat ctactgcccgg cccttcatga cgctgcccatt 840
 ggacacaacc atatccatta ataacacggg cattaccccc atgctgaacc ccatcatcta 900
 ttccctgaga aatcaagaga tgaagtca gatcagagg ctgcagagga gacttggcc 960
 ttccgagagc agaaaatggg ggtgagcagt cagatggaga gtgaaagtct gtctgactta 1020
 gtt 1023

<210> 46

<211> 314

<212> PRT

<213> Homo sapiens

<400> 46

Met Asp Gln Ile Asn His Thr Asn Val Lys Glu Phe Phe Phe Leu Glu
 1 5 10 15

Leu Thr Arg Ser Arg Glu Leu Glu Phe Phe Leu Phe Val Val Phe Phe
 20 25 30

Ala Val Tyr Val Ala Thr Val Leu Gly Asn Ala Leu Ile Val Val Thr
 35 40 45

Ile Thr Cys Glu Ser Arg Leu His Thr Pro Met Tyr Phe Leu Leu Arg
 50 55 60

Asn Lys Ser Val Leu Asp Ile Val Phe Ser Ser Ile Thr Val Pro Lys
 65 70 75 80

Phe Leu Val Asp Leu Leu Ser Asp Arg Lys Thr Ile Ser Tyr Asn Asp
 85 90 95

Cys Met Ala Gln Ile Phe Phe His Phe Ala Gly Gly Ala Asp Ile
 100 105 110

Phe Phe Leu Ser Val Met Ala Tyr Asp Arg Tyr Leu Ala Ile Ala Lys
 115 120 125

Pro Leu His Tyr Val Thr Met Met Arg Lys Glu Val Trp Val Ala Leu
 130 135 140

Val Val Ala Ser Trp Val Ser Gly Gly Leu His Ser Ile Ile Gln Val
 145 150 155 160

Ile Leu Met Leu Pro Phe Pro Phe Cys Gly Pro Asn Thr Leu Asp Ala

165

170

175

Phe Tyr Cys Tyr Val Leu Gln Val Val Lys Leu Ala Cys Thr Asp Thr
180 185 190

Phe Ala Leu Glu Leu Phe Met Ile Ser Asn Asn Gly Leu Val Thr Leu
195 200 205

Leu Trp Phe Leu Leu Leu Gly Ser Tyr Thr Val Ile Leu Val Met
210 215 220

Leu Arg Ser His Ser Gly Glu Gly Arg Asn Lys Ala Leu Ser Thr Cys
225 230 235 240

Thr Ser His Met Leu Val Val Thr Leu His Phe Val Pro Cys Val Tyr
245 250 255

Ile Tyr Cys Arg Pro Phe Met Thr Leu Pro Met Asp Thr Thr Ile Ser
260 265 270

Ile Asn Asn Thr Val Ile Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser
275 280 285

Leu Arg Asn Gln Glu Met Lys Ser Ala Met Gln Arg Leu Gln Arg Arg
290 295 300

Leu Gly Pro Ser Glu Ser Arg Lys Trp Gly
305 310

<210> 47

<211> 953

<212> DNA

<213> Homo sapiens

<400> 47

atcatggacc agatcaaccca cactaatgtg aagcagttt tcttcctgga acttacacgt 60
tccc gagagc tggagtttt ctgtttgtg gtcttcttg ctgtgtatgt agcaacagtc 120
ctggaaatg cactcatgt ggtcactatt acctgtgagt cccgcctaca cactcctatg 180
tactttctcc tgcggAACaa atcagtcttg gacatcggtt ttcatctat caccgtcccc 240
aagtccctgg tggatctttt atcagacagg aaaaccatct cctacaatgg ctgcattggca 300
cagatctttt tcttccactt tgctggtggg gcagatattt tttcctctc tgtgatggcc 360
tatgacagat accttgcattt cgccaagccc ctgcactatg tgaccatgtt gaggaaagag 420
gtgtgggtgg ccttgggtgt ggcttcttgg gtgagttgtg gtttgcattt aatcatccag 480
gtattctga tgcttccatt ccccttctgt ggcccaaca cactggatgc cttctactgt 540
tatgtctcc aggtggtaaa actggcctgc actgacacct ttgctttggg gctttcatg 600
atctctaaca acggacttgtt gaccctgttc tggttcctcc tgctcctggg ctcctacact 660
gtcattctgg tggatgtgtatccactt ggggaggggc ggaacaaggc cctctccacg 720
tgcacgtccc acatgttgtt ggtgactttt cacttcgtgc cttgtgttta catctactgc 780
cgcccttca tgacgtgtcc catggacaca accatatcca ttaataaacac ggtcattacc 840
cccatgctga accccatcat ctattccctg agaaaatcaag agatgaagtc agccatgcag 900
aggctgcaga ggagacttgg gccttccgag agcagaaaat ggggtgagc agt 953

<210> 48

<211> 314

<212> PRT

<213> Homo sapiens

<400> 48

Met	Asp	Gln	Ile	Asn	His	Thr	Asn	Val	Lys	Gln	Phe	Phe	Phe	Leu	Glu
1			5					10						15	
Leu	Thr	Arg	Ser	Arg	Glu	Leu	Glu	Phe	Phe	Leu	Phe	Val	Val	Phe	Phe
		20					25					30			
Ala	Val	Tyr	Val	Ala	Thr	Val	Leu	Gly	Asn	Ala	Leu	Ile	Val	Val	Thr
		35					40					45			
Ile	Thr	Cys	Glu	Ser	Arg	Leu	His	Thr	Pro	Met	Tyr	Phe	Leu	Leu	Arg
		50					55				60				
Asn	Lys	Ser	Val	Leu	Asp	Ile	Val	Phe	Ser	Ser	Ile	Thr	Val	Pro	Lys
	65			70					75				80		
Phe	Leu	Val	Asp	Leu	Leu	Ser	Asp	Arg	Lys	Thr	Ile	Ser	Tyr	Asn	Gly
		85						90					95		
Cys	Met	Ala	Gln	Ile	Phe	Phe	Phe	His	Phe	Ala	Gly	Gly	Ala	Asp	Ile
		100					105					110			
Phe	Phe	Leu	Ser	Val	Met	Ala	Tyr	Asp	Arg	Tyr	Leu	Ala	Ile	Ala	Lys
		115					120				125				
Pro	Leu	His	Tyr	Val	Thr	Met	Met	Arg	Lys	Glu	Val	Trp	Val	Ala	Leu
		130					135				140				
Val	Val	Ala	Ser	Trp	Val	Ser	Gly	Gly	Leu	His	Ser	Ile	Ile	Gln	Val
	145				150				155				160		
Ile	Leu	Met	Leu	Pro	Phe	Pro	Phe	Cys	Gly	Pro	Asn	Thr	Leu	Asp	Ala
		165					170					175			
Phe	Tyr	Cys	Tyr	Val	Leu	Gln	Val	Val	Lys	Leu	Ala	Cys	Thr	Asp	Thr
		180					185					190			
Phe	Ala	Leu	Glu	Leu	Phe	Met	Ile	Ser	Asn	Asn	Gly	Leu	Val	Thr	Leu
		195					200					205			
Leu	Trp	Phe	Leu	Leu	Leu	Leu	Gly	Ser	Tyr	Thr	Val	Ile	Leu	Val	Met
		210				215				220					
Leu	Arg	Ser	His	Ser	Gly	Glu	Gly	Arg	Asn	Lys	Ala	Leu	Ser	Thr	Cys
	225				230				235				240		
Thr	Ser	His	Met	Leu	Val	Val	Thr	Leu	His	Phe	Val	Pro	Cys	Val	Tyr
		245				250						255			
Ile	Tyr	Cys	Arg	Pro	Phe	Met	Thr	Leu	Pro	Met	Asp	Thr	Thr	Ile	Ser
		260				265					270				
Ile	Asn	Asn	Thr	Val	Ile	Thr	Pro	Met	Leu	Asn	Pro	Ile	Ile	Tyr	Ser
		275				280					285				

Leu Arg Asn Gln Glu Met Lys Ser Ala Met Gln Arg Leu Gln Arg Arg
290 295 300

Leu Gly Pro Ser Glu Ser Arg Lys Trp Gly
305 310

<210> 49
<211> 1018
<212> DNA
<213> Homo sapiens

<400> 49
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gaaacatgtat cccattgagc agggaaattt caccaggggg aaggaatctc tttttcaag 120
gactgaccca gtcccaagag cttagcttgg tcttatttct tttcttattt tttgtgtact 180
cagcaactgt gctgggtaac ctccatca tggtcgtggt gacctgttag tctcgcccttc 240
acaccccccac gtacttcctg ctctgcaatc tctctgtgtt gttatctgc ttctctcca 300
tcactgctcg gaaggtgcta atagaccttt caagcagaaa gaccatctcc ttcaatgggt 360
gcatgacaca gatgttttc ttccacctcc tcgggtggac agacgtttt tctcttttg 420
tgatggcggt tgaccaatac atggccatct tcaagcccct gcaactgtgtg accatcgta 480
gtaggggaca gtgctcccta catcgtaggg ctgcctgggt ggggggtttt tccactccat 540
tgtcaggtt ttctgttgc tccactccct tctgtgaca tcatatgatt gatgggttct 600
actgtgatgt ccccccaggtc ctcaaacttg cctgcaccca cacctttgct cttgagggtct 660
taatgatttca aataatggc ttgatctcta tgctgtgggtt catcttctc ctcatatctt 720
acacggtcat cttgatgatg ctgaggtctc acactgagga aggcaggagg aaagccatcg 780
ccacctgcac ctcccacatc actgtggta ccctgcattt cgtgccttc atctatgtgc 840
atgcccagcc ttcaactgccc ctccccacgg acagagctgt ctccatcacc ttacagtca 900
ttattcctgt cctgaacccc atgatctaca ccctgaggaa ccaggagatg aagttagcct 960
tgaggaggcg gaagaaaaga cttctggaa agggatagat gctacgaagt ccagattt 1018

<210> 50
<211> 310
<212> PRT
<213> Homo sapiens

<400> 50
Met Ile Pro Leu Ser Arg Glu Ile Thr Pro Gly Gly Arg Asn Leu Phe
1 5 10 15

Phe Gln Gly Leu Thr Gln Ser Gln Glu Leu Ser Leu Val Leu Phe Leu
20 25 30

Phe Leu Phe Phe Val Tyr Ser Ala Thr Val Leu Gly Asn Leu Leu Ile
35 40 45

Met Val Val Val Thr Cys Glu Ser Arg Leu His Thr Pro Thr Tyr Phe
50 55 60

Leu Leu Cys Asn Leu Ser Val Leu Val Ile Cys Phe Ser Ser Ile Thr
65 70 75 80

Ala Arg Lys Val Leu Ile Asp Leu Ser Ser Arg Lys Thr Ile Ser Phe
85 90 95

Asn Gly Cys Met Thr Gln Met Phe Phe His Leu Leu Gly Gly Thr

100	105	110
Asp Val Phe Ser Leu Phe Val Met Ala Phe Asp Gln Tyr Met Ala Ile		
115	120	125
Phe Lys Pro Leu His Cys Val Thr Ile Val Ser Arg Gly Gln Cys Ser		
130	135	140
Leu His Arg Glu Ala Ser Trp Val Gly Gly Leu Ser Thr Pro Leu Cys		
145	150	155
Arg Tyr Phe Cys Cys Ser Thr Pro Phe Cys Gly His His Met Ile Asp		
165	170	175
Gly Phe Tyr Cys Asp Val Pro Gln Val Leu Lys Leu Ala Cys Thr His		
180	185	190
Thr Phe Ala Leu Glu Val Leu Met Ile Ser Asn Asn Gly Leu Ile Ser		
195	200	205
Met Leu Trp Phe Ile Phe Leu Leu Ile Ser Tyr Thr Val Ile Leu Met		
210	215	220
Met Leu Arg Ser His Thr Glu Glu Gly Arg Arg Lys Ala Ile Ala Thr		
225	230	235
240		
Cys Thr Ser His Ile Thr Val Val Thr Leu His Phe Val Pro Cys Ile		
245	250	255
Tyr Val His Ala Gln Pro Ser Leu Pro Leu Pro Thr Asp Arg Ala Val		
260	265	270
Ser Ile Thr Phe Thr Val Ile Ile Pro Val Leu Asn Pro Met Ile Tyr		
275	280	285
Thr Leu Arg Asn Gln Glu Met Lys Ser Ala Leu Arg Arg Arg Lys Lys		
290	295	300
Arg Pro Ser Gly Lys Gly		
305	310	

<210> 51
 <211> 958
 <212> DNA
 <213> Homo sapiens

<400> 51
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 cctcttggcc gtaggggcca acaccaccct cctgacgacc atctggctgg aggcctctct 180
 gcaccagccc ctgtactacc tgctcagcct cctctccctg ctgggcatcg tgctctgcct 240
 cactgtcatc cccaaaggccc tgaccatctt ctggtttgac ctcaggcccc tcagcttccc 300
 tgcctgcttc ctccagatgt acatcatgaa ttgtttctta gccatggagt cttgcacatt 360
 catggtcatg gcctatgatc gttatgttagc catctgccac ccactggat atccatcaat 420
 catcaactgat cactttgttag tcaaggctgc catgttattt ttgaccagaa atgtgcttat 480
 gactctgccc atccccatcc tttcagcaca actccgttat tggaaagaa atgtcattga 540

gaactgcata tgtgccaata tgtctgttcc cagactctcc tgcgatgatg tcaccatcaa 600
tcacccttac cagtttgcgtg gaggctggac tctgcttagga tctgacctca tccttatctt 660
cctctccatc accttcattc tgcgagctgt gctgagactc aaggcagagg gtgcgtggc 720
aaaggcccta agcacatgtg gctcccactt catgctcatc ctcttcttca gcaccatcct 780
tctggtttt gtcctcacac atgtggctaa gaagaaagtc tcccctgatg tgccagtctt 840
gctcaatgtt ctccaccatg tcattcctgc agccctaac cccatcattt acggggtgag 900
aaccctaaatc attaagcagg gaatgcagag gttgttgaag aaagggtgct aacaagga 958

<210> 52

<211> 315

<212> PRT

<213> Homo sapiens

<400> 52

Met Thr Thr His Arg Asn Asp Thr Leu Ser Thr Glu Ala Ser Asp Phe
1 5 10 15

Leu Leu Asn Cys Phe Val Arg Ser Pro Ser Trp Gln His Trp Leu Ser
20 25 30

Leu Pro Leu Ser Leu Leu Phe Leu Leu Ala Val Gly Ala Asn Thr Thr
35 40 45

Leu Leu Thr Thr Ile Trp Leu Glu Ala Ser Leu His Gln Pro Leu Tyr
50 55 60

Tyr Leu Leu Ser Leu Leu Ser Leu Leu Gly Ile Val Leu Cys Leu Thr
65 70 75 80

Val Ile Pro Lys Val Leu Thr Ile Phe Trp Phe Asp Leu Arg Pro Ile
85 90 95

Ser Phe Pro Ala Cys Phe Leu Gln Met Tyr Ile Met Asn Cys Phe Leu
100 105 110

Ala Met Glu Ser Cys Thr Phe Met Val Met Ala Tyr Asp Arg Tyr Val
115 120 125

Ala Ile Cys His Pro Leu Arg Tyr Pro Ser Ile Ile Thr Asp His Phe
130 135 140

Val Val Lys Ala Ala Met Phe Ile Leu Thr Arg Asn Val Leu Met Thr
145 150 155 160

Leu Pro Ile Pro Ile Leu Ser Ala Gln Leu Arg Tyr Cys Gly Arg Asn
165 170 175

Val Ile Glu Asn Cys Ile Cys Ala Asn Met Ser Val Ser Arg Leu Ser
180 185 190

Cys Asp Asp Val Thr Ile Asn His Leu Tyr Gln Phe Ala Gly Gly Trp
195 200 205

Thr Leu Leu Gly Ser Asp Leu Ile Leu Ile Phe Leu Ser Tyr Thr Phe
210 215 220

Ile Leu Arg Ala Val Leu Arg Leu Lys Ala Glu Gly Ala Val Ala Lys
225 230 235 240

Ala Leu Ser Thr Cys Gly Ser His Phe Met Leu Ile Leu Phe Phe Ser
245 250 255

Thr Ile Leu Leu Val Phe Val Leu Thr His Val Ala Lys Lys Lys Val
260 265 270

Ser Pro Asp Val Pro Val Leu Leu Asn Val Leu His His Val Ile Pro
275 280 285

Ala Ala Leu Asn Pro Ile Ile Tyr Gly Val Arg Thr Gln Glu Ile Lys
290 295 300

Gln Gly Met Gln Arg Leu Leu Lys Lys Gly Cys
305 310 315

<210> 53

<211> 980

<212> DNA

<213> Homo sapiens

<400> 53

ttccagagat gaacctgata aaggatctgt gattcaatgg atcagagaaaa ttacaccaga 60
gtgaaaatat ttaccttcct gggaaattact cagtcccgag aactgagcca ggtcttattt 120
accttcgtgt ttttgggtta catgacaact ctaatggaa acttcctcat catggttaca 180
gttacctgtg aatctcacct tcatacgccc atgtacttcc tgctccgcaa cctgtctatt 240
cttgacatct gcttttcctc catcacagct cctaaggatcc tgatagatct tctatcagag 300
acaaaaacca ttccttcag tggctgtgtc actcaaatgt tcttcttcca ctttctgggg 360
ggagcagacg tttttctct ctctgtatg gcgtttgcacc gctatatacg catctccaaag 420
cccctgcact atatgaccat catgagtagg gggcgatgca caggcctcat ccactccata 480
gcccagatt ctctattgtc cccactccct gtctgtggac ccaatgttct tgacactttc 540
tactgcgtatg tcccccaagg ctc当地acttgcactg acacccatcac tctggagctc 600
ctgtatgattt caaataatgg gttatgtatg tggtttgcattt tcttctttct cctcatatct 660
tacacggatca tcttgcattat gctgaggatct cacactgggg aaggcaggag gaaaggccatc 720
tccacactgc a cctccacat caccgtgggt accctgcatt tctgtccctg catctatgtc 780
tatccccggc ccttcactgc cctccccaca gacactgcac tcttgcatttgc cttcaactgtc 840
atctccctt tgctcaatcc tataatttac acgctgagga atcaggaaat gaagttggcc 900
atgaggaaac tgaagagacg gctaggacaa tcagaaagga ttttaattca ataaggtaa 960
gatagtaccc atatttaaag 980

<210> 54

<211> 305

<212> PRT

<213> Homo sapiens

<400> 54

Met Asp Gln Arg Asn Tyr Thr Arg Val Lys Glu Phe Thr Phe Leu Gly
1 5 10 15

Ile Thr Gln Ser Arg Glu Leu Ser Gln Val Leu Phe Thr Phe Leu Phe
20 25 30

Leu Val Tyr Met Thr Thr Leu Met Gly Asn Phe Leu Ile Met Val Thr

35	40	45	
Val Thr Cys Glu Ser His Leu His Thr Pro Met Tyr Phe Leu Leu Arg			
50	55	60	
Asn Leu Ser Ile Leu Asp Ile Cys Phe Ser Ser Ile Thr Ala Pro Lys			
65	70	75	80
Val Leu Ile Asp Leu Leu Ser Glu Thr Lys Thr Ile Ser Phe Ser Gly			
85	90	95	
Cys Val Thr Gln Met Phe Phe His Leu Leu Gly Gly Ala Asp Val			
100	105	110	
Phe Ser Leu Ser Val Met Ala Phe Asp Arg Tyr Ile Ala Ile Ser Lys			
115	120	125	
Pro Leu His Tyr Met Thr Ile Met Ser Arg Gly Arg Cys Thr Gly Leu			
130	135	140	
Ile His Ser Ile Ala Gln Ile Ser Leu Leu Leu Pro Leu Pro Val Cys			
145	150	155	160
Gly Pro Asn Val Leu Asp Thr Phe Tyr Cys Asp Val Pro Gln Val Leu			
165	170	175	
Lys Leu Ala Cys Thr Asp Thr Phe Thr Leu Glu Leu Leu Met Ile Ser			
180	185	190	
Asn Asn Gly Leu Val Ser Trp Phe Val Phe Phe Phe Leu Leu Ile Ser			
195	200	205	
Tyr Thr Val Ile Leu Met Met Leu Arg Ser His Thr Gly Glu Gly Arg			
210	215	220	
Arg Lys Ala Ile Ser Thr Cys Thr Ser His Ile Thr Val Val Thr Leu			
225	230	235	240
His Phe Val Pro Cys Ile Tyr Val Tyr Ala Arg Pro Phe Thr Ala Leu			
245	250	255	
Pro Thr Asp Thr Ala Ile Ser Val Thr Phe Thr Val Ile Ser Pro Leu			
260	265	270	
Leu Asn Pro Ile Ile Tyr Thr Leu Arg Asn Gln Glu Met Lys Leu Ala			
275	280	285	
Met Arg Lys Leu Lys Arg Arg Leu Gly Gln Ser Glu Arg Ile Leu Ile			
290	295	300	
Gln			
305			

<210> 55
 <211> 955
 <212> DNA

<213> Homo sapiens

<400> 55

attcaatgga tcagagaaaat tacaccagag taaaagaatt tacccctcgt ggaattactc 60
agtcccgaga actgagccag gtcttattta cttccctgtt tttgggtgtac atgacaactc 120
taatggaaa cttcctcattc atggttacag ttacctgtga atctcacctt catacgccca 180
tgtacttcct gctccgcaac ctgtctattc ttgacatctg ctttcctcc atcacagctc 240
ctaaaggcct gatacatctt ctatcagaga caaaaaccat ctccttcagt ggctgtgtca 300
ctcaaataatgtt cttctccac cttctgggg gaggacgt ttttctctc tctgtgtatgg 360
cgttgaccg ctatatagccc atctccaaagc ccctgcacta tatgaccatc atgagtaggg 420
ggcgatgcac aggctcattc gtggcttcct ggggggggg ctttgcac tccatagcgc 480
agatttctctt attgctccca ctccctttctt gtggacccaa tggatcttgcactt 540
gcatgtccc ccaggctcctc aaacttgcggc gcaactgacac cttcactctg gagctccatgg 600
tgatttcaaa taatgggtta gtcagttgggt ttgtattctt ctttctctc atatcttaca 660
cggtcatctt gatgtgtctg aggtctcaca ctggggaaagg caggaggaaa gcatctcca 720
cctgcacccctt ccacatcacc gtggatccctc tgcattctgt gccctgcac tatgtctatgg 780
cccgccctt cactgcctc cccacagaca ctgcatctc tgcacccctc actgtcatct 840
cccctttgtt caatcctata attacacgc tgaggaatca gaaatgaag ttggccatga 900
ggaaactgaa gagacggcta ggacaatcg aaaggatttt aattcaataaa gggta 955

<210> 56

<211> 314

<212> PRT

<213> Homo sapiens

<400> 56

Met Asp Gln Arg Asn Tyr Thr Arg Val Lys Glu Phe Thr Phe Leu Gly
1 5 10 15

Ile Thr Gln Ser Arg Glu Leu Ser Gln Val Leu Phe Thr Phe Leu Phe
20 25 30

Leu Val Tyr Met Thr Thr Leu Met Gly Asn Phe Leu Ile Met Val Thr
35 40 45

Val Thr Cys Glu Ser His Leu His Thr Pro Met Tyr Phe Leu Leu Arg
50 55 60

Asn Leu Ser Ile Leu Asp Ile Cys Phe Ser Ser Ile Thr Ala Pro Lys
65 70 75 80

Val Leu Ile Asp Leu Leu Ser Glu Thr Lys Thr Ile Ser Phe Ser Gly
85 90 95

Cys Val Thr Gln Met Phe Phe His Leu Leu Gly Gly Ala Asp Val
100 105 110

Phe Ser Leu Ser Val Met Ala Phe Asp Arg Tyr Ile Ala Ile Ser Lys
115 120 125

Pro Leu His Tyr Met Thr Ile Met Ser Arg Gly Arg Cys Thr Gly Leu
130 135 140

Ile Val Ala Ser Trp Val Gly Gly Phe Val His Ser Ile Ala Gln Ile
145 150 155 160

Ser Leu Leu Leu Pro Leu Pro Phe Cys Gly Pro Asn Val Leu Asp Thr
 165 170 175
 Phe Tyr Cys Asp Val Pro Gln Val Leu Lys Leu Ala Arg Thr Asp Thr
 180 185 190
 Phe Thr Leu Glu Leu Leu Met Ile Ser Asn Asn Gly Leu Val Ser Trp
 195 200 205
 Phe Val Phe Phe Leu Leu Ile Ser Tyr Thr Val Ile Leu Met Met
 210 215 220
 Leu Arg Ser His Thr Gly Glu Gly Arg Arg Lys Ala Ile Ser Thr Cys
 225 230 235 240
 Thr Ser His Ile Thr Val Val Thr Leu His Phe Val Pro Cys Ile Tyr
 245 250 255
 Val Tyr Ala Arg Pro Phe Thr Ala Leu Pro Thr Asp Thr Ala Ile Ser
 260 265 270
 Val Thr Phe Thr Val Ile Ser Pro Leu Leu Asn Pro Ile Ile Tyr Thr
 275 280 285
 Leu Arg Asn Gln Glu Met Lys Leu Ala Met Arg Lys Leu Lys Arg Arg
 290 295 300
 Leu Gly Gln Ser Glu Arg Ile Leu Ile Gln
 305 310

<210> 57
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 57
 acgtctgtgt tatgttgct tt 22

 <210> 58
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 58
 cttttccttc atgacacaccc gctttg 26

<210> 59
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 59
ggatgtaatg agggatgttg tg 22

<210> 60
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 60
acttcggcct tatgtaccc tc at 22

<210> 61
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 61
actgtgatga ggcattacac agacct 26

<210> 62
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 62
gcacatctgt gaaggaaaga ag 22

<210> 63
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 63
acgtctgtgt tatgttggtt tt 22

<210> 64
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 64
ctttccttc atgacacacc gctttg 26

<210> 65
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 65
ggatgtaatg agggatgttg tg 22

<210> 66
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 66
ggccatgttg tctatgattt at 22

<210> 67
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 67

tctgtccaca tccactatcc ccaaaa

26

<210> 68
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 68
ttgaaccaga agattcctag ca

22

<210> 69
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 69
ctacacgacg gtcctgactg ggt

23

<210> 70
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 70
catcaccaag attggcatgg ctgctgtggc

30

<210> 71
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 71
aaggggagtg gagtcattag tg

22

<210> 72
<211> 22

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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
      primer

<400> 72
catattctgg ttcaggatc ag 22

<210> 73
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
      primer

<400> 73
caacttcttt gcctgtctgg tccaga 26

<210> 74
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
      primer

<400> 74
atggagaagg agtgaaggaa ga 22

<210> 75
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
      primer

<400> 75
cttatccct tcaggcagtt ct 22

<210> 76
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide

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primer

<400> 76
acttcctct cagaggcccg ctacaa 26

<210> 77
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 77
gtgagagaca catgtcccaa at 22

<210> 78
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 78
taacacatcc aactgccttc tt 22

<210> 79
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 79
aggcctggaa cacctgcaca tct 23

<210> 80
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 80
ctaaggcagaa agggatggag at 22

<210> 81
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 81
taacacatcc aactgccttc tt

22

<210> 82
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 82
aggcctggaa cacctgcaca tct

23

<210> 83
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 83
ctaaggcagaa agggatggag at

22

<210> 84
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 84
ttttcttgta tgggtgagaa ag

22

<210> 85
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 85
tctctacatc tgcaaatcct gcccct 26

<210> 86
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 86
gccatcaagc aacaacaata at 22

<210> 87
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 87
ttccctactg gggacagaat at 22

<210> 88
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 88
tactttgtg aacctcctgc ctcct 26

<210> 89
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 89
gccatttctg tgctgtaagt gt 22

<210> 90
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 90
tctacaccttgt gaccctgatt tg 22

<210> 91
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 91
catgggtctt atcatcctca tcagaa 26

<210> 92
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 92
atgggtgtgt tcagatgaga gt 22

<210> 93
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 93
ctgacatcat cacagagcag aa 22

<210> 94

<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 94
catttccttt gttggctgtg ccact 25

<210> 95
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 95
ccatcccaca gaagacaaaag ta 22

<210> 96
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 96
tggacacctct gtctgaaaga aa 22

<210> 97
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 97
ccatctcctt caatcattgc ttcaactca 28

<210> 98
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 98
atacatccac ccctccaata ag

22

<210> 99
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 99
ccatctctgt caccttcaact gt

22

<210> 100
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 100
atctccctc tgctgaaccc tttgat

26

<210> 101
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 101
tcttctcatg gctgacttca tt

22

<210> 102
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 102
tgcattcaat catccaggt a

22

<210> 103
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 103
ccccaacaca ctggatgcct tctact 26

<210> 104
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 104
tttaccacct ggagcacata ac 22

<210> 105
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 105
ctgcaatctc tctgtgttgg tt 22

<210> 106
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 106
tccatcactg ctcggaaggt gctaat 26

<210> 107
<211> 22
<212> DNA

<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 107
gaaggagatg gtctttctgc tt

22

<210> 108
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 108
ccctgcacta tatgaccatc at

22

<210> 109
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 109
atgcacaggc ctcatccact ccatag

26

<210> 110
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 110
ggagtgggag caatagagaa at

22

<210> 111
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 111
tctccttcac tgatgtcacc tt 22

<210> 112
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 112
ccaccatggc acctaatacg ctgtgca 27

<210> 113
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 113
tccttgaggt tgaaccagaa ta 22